Pacific Seabird Group

BULLETIN

Volume 10 Number 2 1983

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PACIFIC SEABIRD GROUP
BULLETIN

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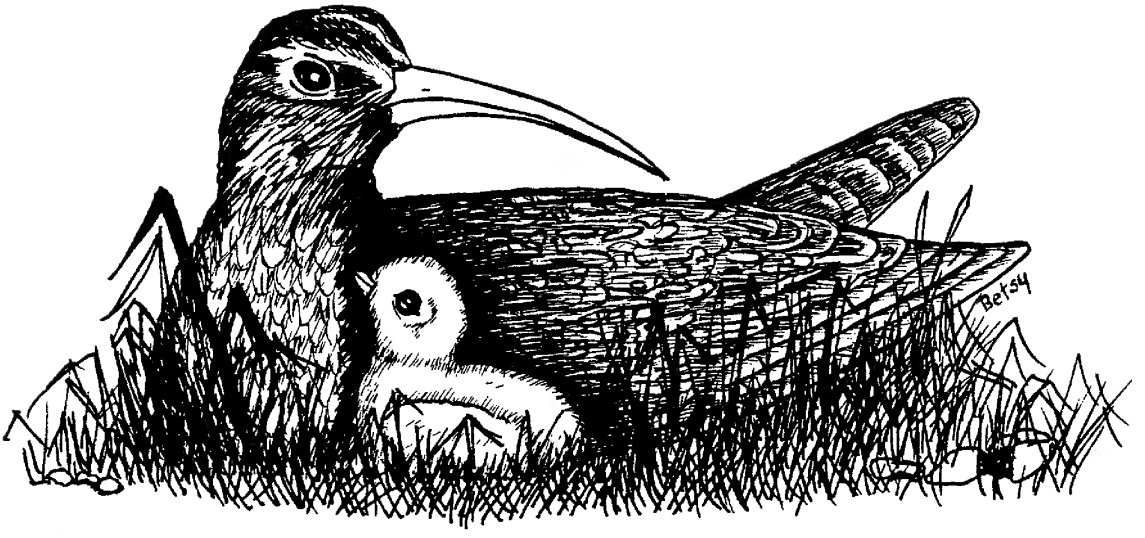

Betsy

THE CHAIRMAN'S PAGE

It has been a very busy year for me as PSG Chairman. I recently sent incoming Chairman Judith Hand 1½ inches of files from 1983 that did not include any of the lengthy federal environmental impact statements sent to me for comments nor the miscellaneous résumés sent to PSG by individuals seeking employment. If paperwork is any indication of growth or influence, PSG is rapidly increasing on both fronts. More important, PSG has had several opportunities to become involved in significant conservation issues. For example, we were among some 80 organizations that successfully opposed the establishment in the Shetland Islands of mink farms that could have potentially harmed seabird colonies there.

PSG has made much progress this year. We are now affiliated with ICBP-USA section. We have produced the first international directory of seabird biologists, incorporating the membership lists of all five seabird groups. A copy will be distributed to each individual listed. We have established an endowment fund to raise money for symposia and student research projects.

The membership has overwhelmingly decided not to change our name, and I for one hope that this issue can be permanently buried. A formal bylaw proposal to overhaul our present Regional Representative system will be presented to the membership this year.

Our Tenth Annual Meeting at Asilomar was a resounding success, thanks especially to the organizational efforts of Fran and Dick Mewaldt. Judith Hand did an exceptional job of scheduling papers in a cohesive manner, no easy task. A high point of the meeting was a review of the First Decade of PSG by J. Michael Scott.

The Tropical Seabird Biology Symposium is now available to PSG members for $9.00 from the Cooper Ornithological Society. Editor Ralph Schreiber deserves a special medal for producing the volume within a year. David Nettleship hopes the 1982 Seattle symposia will be available in July 1984.

Our next annual meeting will occur in Long Beach, California, from *14-16* December 1984 and will feature a tern symposium organized by Barbara Massey. The Executive Council voted to meet jointly with the Colonial Waterbird Group in San Francisco during 1985 and to meet again with CWG in Washington, D.C., during 1987 or 1988. We hope to be able to award some travel grants to students to present papers in Washington. Symposium topics for the PSG-CWG meetings are still to be decided; I urge members to suggest appropriate topics.

I have enjoyed my years as Chairman-Elect and Chairman. PSG enters its second decade as a strong and viable organization. It will remain so with the active participation of the membership. I believe that we will gain influence and credibility and hope that ten years hence we will be genuinely involved in Latin America. PSG is in good hands with incoming Chairman Judith Hand, and I wish her well.

Craig S. Harrison

PACIFIC SEABIRD GROUP NEWS

AAAS Symposium

The Pacific Seabird Group is sponsoring a symposium on "the impact of the 1982-83 El Niño on seabird biology" as part of the Western Regional Meeting of the AAAS. The meeting will be held 10-16 June 1984 at San Francisco State University. The seabird symposium will be held on Wednesday, 13 June. Other symposia of interest to PSG members include those on the origin of flight, developmental and functional aspects of bioacoustics, rates of evolution, and human origins. Details will be announced in *Science*, or contact Dr. Robert I. Bowman, Dept. Biological Sciences, San Francisco State Univ., San Francisco, CA 94132. Eleven papers by PSG members are scheduled.

Proceedings, PSG Seattle Symposium

The publication of the proceedings of the 1982 PSG special symposium on the feeding ecology of marine birds and fisheries interactions is now scheduled for July 1984. To expedite the volume's appearance, proofs will *not* be sent to authors. Final checks of each paper will be made by David N. Nettleship and the Canadian Wildlife Service Publications Unit. Queries should be directed to David N. Nettleship (902-426-3274).

Contributors wishing to cite their work as *in press* should use the following citation:

In: D. N. Nettleship, G. A. Sanger, and P. F. Springer (eds.), Marine birds: Their feeding ecology and commercial fisheries relationships. Spec. Pub. Can. Wildl. Ser., Ottawa.

1983 PSG members will receive a free copy.

Proceedings, PSG Honolulu Symposium

The proceedings of the 1983 PSG special symposium on tropical seabird biology are now available. The volume contains eight review articles and is available to PSG members at a reduced price. Details are given in NEW PUBLICATIONS.

Proposed Minutes of the Pacific Seabird Group Executive Council Meetings, 5 and 6 January 1984

1. *Quorum Present*: Craig Harrison called the 10th Executive Council Meeting to order at 3:00 p.m., 5 January 1984, at Asilomar Conference Center. Executive Council members present were: Craig Harrison, Judith L. Hand, Susan E. Quinlan, Kees Vermeer, Stewart I. Fefer, Enriqueta Velarde, Robert Boekelheide, Daniel H. Varoujean, and Jeff B. Froke. Doug Forsell held proxy for Tony DeGange; Judith Hand held proxies for Joseph G. Strauch, Jr., and Erica H. Dunn.

2. *Minutes of Previous Meeting*: Judith Hand read the minutes from the 9th Executive Council Meeting as published in the winter 1983 bulletin. These were unanimously approved.

3. *Treasurer's Report*: Richard Mewaldt reported that Douglas Siegel-Causey was unable to attend. Siegel-Causey had indicated a year-end total (checking and savings combined) of $8,995.45. The following 1983 costs remain to be paid: $5,000 for printing the symposium and $1,000 for the world directory of seabird biologists. Craig Harrison stated that he believed the symposium costs were $4,000 rather than $5,000. Mewaldt also reported that Siegel-Causey recommended a new bylaw whereby anyone delinquent in dues for more than one year shall be dropped from the membership roll. He indicated that of 441 members (not including libraries), 111 are currently delinquent in dues. Mewaldt suggested a letter be sent from the Chairman to delinquent members. He indicated such a letter would likely garner more recruits than a letter to AOU or Cooper Society members in search of new memberships. He suggested the latter would result in only a 2-7% response, while the former would likely generate a much higher response.

4. *Local Committee*: Mewaldt then welcomed PSG to Asilomar and outlined some of the problems in dealing with the State of California for use of Asilomar facilities. This year, PSG asked for 80 rooms in expectation of 160 people. Too few people signed up, so this was later cut to 40 rooms. Even so, 4-6 rooms were reserved but not used, so PSG will have to bear their cost. Also, cost overruns are likely, since the original registration fee was based on an expected 160 attendees.

5. *Thanks*: Harrison thanked Mewaldt for his efforts in dealing with Asilomar and expressed confidence in success of the conference. Harrison further acknowledged Siegel-Causey's efforts in consolidating membership and banking for PSG. The six to eight accounts PSG had when Siegel-Causey took office have been consolidated into one account. Further, 39% of the membership were previously delinquent; this has been reduced to 25% through Siegel-Causey's efforts.

6. *Election Results*: Harrison reported the results of the election. Dan Anderson was elected Chairman-Elect; Treasurer and Secretary remain the same. New Regional Representatives are Gary Kaiser, British Columbia; Palmer Sekora, Oregon; and Jeff Froke, Southern California.

   New Non-Regional Representatives are Ken Briggs, Ron Naveen, and Craig Harrison. Harrison noted that it was particularly difficult to find Non-Regional Representatives. Results of the ballot on the PSG name change and Regional Representation system were as follows:

   —About one-third of the current PSG membership lives and works outside of Pacific areas. In light of this, should the PSG expand its primary geographic area of interest and change its name to reflect this change? [Result: 51 - yes; 105 - no]

   If the members vote to change the name of PSG, which of the following names do you prefer? [Results: 25 - Marine Bird Society; 9 - Marine Bird Group; 33 - American Seabird Group; 10 - Seabird Society; 36 - North American Seabird Group; 20 - North American Seabird Society]

   —If the members vote to change the primary geographic area of interest to PSG, I prefer the following as the new area of primary interest. [Results: 40 - Pacific, Arctic, and Atlantic waters of North America (including Hawaii); 21 - Marine waters of North America and the North Pacific Basin; 20 - All waters of the Americas (North, Central,

South, and Hawaii); 57 - Marine waters of North and South America and the entire Pacific Basin]

—Do you favor changing the regional representative system *regardless* of the outcome of the first three proposals? [Results: 51 - no; 62 - yes, I prefer that the areas represented be revised to better reflect the actual distribution of the current membership and favor the following system: 1 representative from each of the following 11 areas: (1) Alaska; (2) British Columbia and Washington State; (3) Oregon and Northern California (all members in California with Zip Codes starting with 954, 955, and 959-961); (4) Central California (all members with Zip Codes starting with 940-953 and 956-958); (5) Southern California (no change from current area); (6) Hawaii, Asia, and South Pacific; (7) Latin America; (8) Maritime Canada, New England, and Europe; (9) Remainder of the U.S. east coast states, Gulf of Mexico states, and Africa; (10) U.S. states and Canadian Provinces bordering the Great Lakes; (11) inland states and provinces; 23 - yes, I prefer a Pacific (7 representatives) and an Atlantic (4 representatives) region. Each region would set up its own subregions from which to elect representatives; 19 - yes, the Executive Council should devise a new system different from options B and C.]

Accordingly, PSG will retain its current name.

Harrison indicated the changes in the bylaws required by the vote to change the representative system will be recommended by the Strauch committee.

Harrison noted that the election this year was again not on time, but it's always good to aim for the schedule. Also, some members were confused about representatives; members should vote for representatives only in their own region. This needs to be clarified on the next ballot.

7. *Chairman's Report*: Harrison indicated that PSG correspondence was 3-4 times the volume of 5 years ago and includes everything from résumés to requests for comments on development proposals. He expects that within 5-10 years PSG will need a half-time, paid Director. In the past year, Harrison spent 5-10 hr/week on PSG. Harrison also pointed out the tremendous amount of work required by the Editor and suggested it may need to be a paid position also.

   Ron Naveen and William Drury were appointed PSG representatives to the International Council for Bird Preservation (ICBP). Naveen attended the annual ICBP meeting in New York. These individuals are expected to continue as PSG representatives for several years to maintain continuity.

   ICBP has formed an International Seabird Working Group. The 40-50 papers presented at the Cambridge meeting on the regional status of seabirds worldwide are currently being typed. George Watson, the original Chairman of the group, resigned and Ralph Schreiber was selected as the new Chairman.

   The international directory of members of all five seabird groups in the world will be out soon (4-6 weeks). PSG will send an appropriate number to each of the other four groups and one to each PSG member. Harrison reported the printing costs at $600. Harrison reported that few members gave their telephone numbers, although they were requested.

The Chairman responded to several requests for PSG support including a letter requested by the Shetland Bird Club to prevent establishment of a mink farm in a seabird area.

Harrison reported that the Seattle PSG Symposium is now scheduled to be published in July 1984. A free copy will be sent to each PSG member. The Honolulu Symposium published by Cooper Ornithological Society will be available soon and will be $12.00 to the public, and $9.00 to PSG members.

Hand reported that AAAS will be holding a special session on the Oceanographic and Meteorological effects of El Niño at their Western Regional Meeting in San Francisco, 18 June. Through Hand's efforts, PSG is organizing papers on the effects of El Niño on seabirds. At present, eight members will be presenting papers.

8. *Standing Committee Reports*: Harrison indicated that reports were needed from three standing committees. Hunt, Chairman of the Fisheries Committee, and Siegel-Causey, Chairman of the Translations Committee, were not present. Vermeer stated that the Conservation Committee would meet during the conference to discuss the possibility of a pamphlet on preventing disturbance to seabird colonies, organizing a joint PSG-Colonial Waterbird Group (CWG) Conference, and other possible activities.

9. *Membership Attrition*: Harrison reported that membership attrition is a problem and PSG needs to recruit members. He showed a brochure from the Colonial Waterbird Group (CWG) and suggested one be developed for PSG. Membership recruitment was difficult in 1983 due to the name change question. Discussion followed regarding who could distribute the brochure, what members have not paid and why. Boekelheide *MOVED* that in the future, the Treasurer shall send a letter to all delinquent members indicating that their names will be dropped from the membership list unless they pay by a given date. Forsell *SECONDED*. The *MOTION PASSED* unanimously.

   Discussion ensued regarding the need to have membership information and a list of delinquent members at the conference registration desk. Hand recommended that in the future local committees have a person assigned to collect dues and allow payment of two years at a time. The international seabird membership directory was suggested as a membership incentive.

10. *Incorporation*: Harrison listed three reasons that PSG should incorporate: (1) all other conservation groups are incorporated, and the action solidifies the organization; (2) if PSG is to set up an endowment fund, it needs to be incorporated so it appears to be a permanent group and will be more attractive to potential donors; (3) until PSG is incorporated, the members of the Executive Council are personally liable for actions of other Council members and groups related to PSG.

    Incorporation requires only putting an "Articles of Incorporation" together; PSG is already a tax-exempt, nonprofit organization. Froke *MOVED* to allow the Executive Council the discretion to incorporate. Hand *SECONDED* the motion. The *MOTION PASSED* unanimously.

11. *Bulletin*: Hand announced that Strauch has a 10-year index to the PSG Bulletin in draft form.

12. *Grant Administration*: Harrison announced that he had been approached by a member who had received a grant to pay publication costs for a journal article from a tax-exempt organization. Since money needs to go to another tax-exempt organization rather than to an individual, Harrison had agreed that PSG receive the money and then pay it out to the journal.

    General discussion was in support of this action, but the Council agreed that PSG should be acknowledged for such assistance. Hand noted PSG has a PR problem; no one knows what it does, so acknowledgments such as this are important.

13. *Future Meetings*: Next year's meeting, as previously decided, will be in Long Beach at the Hyatt Regency Hotel on 14-16 December. The Executive Council meeting will be on the 13th. Costs are estimated at $74.00 for a double room/night with a $15.00-per person banquet. A van shuttle will be available from the Los Angeles airport. The local committee is headed by Collins and Warter. A tern symposium organized by Barbara Massey will be held during the conference. Publication of the symposium at present depends on the response.

    Three proposals have been made for future meetings: (1) Spencer Sealy suggested an alcid symposium; (2) a joint meeting with the Colonial Waterbird Group was again proposed; and (3) George Divoky had proposed a synthesis of OCS work to be sponsored by PSG but paid for by NOAA.

    Sealy reviewed his reasons for desiring to set up an alcid symposium and projected that it would take 3-5 years to organize. At present, Sealy envisions the symposium's being held during a regular PSG meeting and the proceedings to be published in Studies in Avian Biology.

    Hand reviewed the proposal for a joint meeting with CWG and indicated that CWG had proposed a joint meeting in 1985 or 1987 in Washington, D.C. This location was chosen because it was near relevant agency and nonprofit conservation group headquarters. Much discussion followed regarding the pros and cons of meeting at so distant a location. Several people pointed out that outlying meetings such as the one in Tucson are poorly attended. The annual meeting is the important major activity of PSG and should be accessible to all members.

    Harrison and Hand reviewed Divoky's proposal, as Divoky was unable to attend. Much seabird work has been done, but OCSEAP does not have any ornithologists on its staff and is interested in synthesis of work. Divoky offered to write a proposal to submit to OCSEAP whereby selected PSG members would synthesize and write chapters on various species and an editor would be available for one month to produce a proceedings. The synthesis would be presented at a meeting hosted by PSG but cosponsored by U.S. Fish and Wildlife Service and might be held in Alaska in 1985. Much discussion followed regarding pros and cons of meeting in Alaska, need for scheduling such a meeting in summer rather than winter; need for more details on exactly what Divoky proposed that PSG do; and probability that organization and synthesis of the available information would take longer than one year and require more than one month of an editor's time.

    Palmer Sekora *MOVED* that Divoky be asked to prepare a concrete proposal for such a synthesis meeting; that the proposal include a clear definition of what the meeting

will cover, which PSG meeting it will be held in conjunction with, more precise estimates of the costs of paying writers and editors, exactly who will pay the writers and editors and meeting costs, written commitments by synthesis participants; and that the proposal be presented to the Executive Council or their appointees by 1 July. Forsell *SECONDED* the motion. The *MOTION PASSED* unanimously. Harrison appointed Forsell, Briggs, Varoujean, and Sealy to a committee to evaluate the merits of the proposal when it is received. Forsell was designated chairman.

Discussion continued regarding schedule of future meetings. Victoria, Portland, Vancouver, Asilomar, and San Francisco were discussed. Froke *MOVED* that PSG ask the Point Reyes Bird Observatory, California Academy of Sciences, San Francisco Wildlife Refuge, and San Francisco Bay Bird Observatory to sponsor a 1985 PSG meeting in San Francisco and invite the Colonial Waterbird Group to hold a joint meeting with us at this time. Hand *SECONDED*. The *MOTION PASSED* unanimously.

Council members emphasized that a joint meeting should be 2½-3 days long and include poster sessions to avoid concurrent sessions.

Sealy requested an endorsement of his proposal for an alcid symposium and promised to supply a more detailed outline once he received general approval. Boekelheide *MOVED* to endorse in concept the proposal that Spencer Sealy organize a symposium on Pacific alcids. Varoujean *SECONDED*; the *MOTION PASSED* unanimously.

14. *Endowment Fund*: Hand proposed setting up a PSG endowment fund to bring speakers from around the world to PSG symposia, help pay publishing costs for future symposia, and possibly fund small research projects. She suggested using the $1,000 contribution from the Bullitt Foundation to start the fund and then aim for $100,000, with a stipulation that the principal never be spent. Discussion followed about the need for a nice brochure for membership recruitment and endowment fund, and need for a trusteeship to oversee the endowment fund.

    Hand *MOVED* (a) that PSG establish an endowment fund for funding quality seabird symposia and their publication; (b) that all donations to the fund be considered principal to be invested, funding for symposium-related activities to be decided by the Executive Council and to come only from investment income; (c) that financial management of the fund be the responsibility of the Treasurer and two investing trustees, the trustees to be chosen by the Executive Council for terms of at least three years; investing trustee may be removed at any time by vote of Executive Council. Forsell *SECONDED*; the *MOTION PASSED* unanimously.

    Hand *MOVED* that a Fund-raising Committee be established by recruiting members at the meeting and a Chairman be appointed by the Executive Council, when a suitable candidate is located. Vermeer *SECONDED. MOTION PASSED* unanimously.

15. *Thanks*: Hand *MOVED* that PSG express our deepest appreciation to Dick and Fran Mewaldt for their excellent organization of this year's conference and for volunteering when approached at the last minute. Boekelheide *SECONDED. MOTION PASSED* unanimously.

Hand *MOVED* that PSG express sincere thanks to Joe Strauch for his hard work on the membership directory and 10-year index to the PSG Bulletin. Quinlan *SECONDED*. *MOTION PASSED* unanimously. Leschner proposed a trophy be presented to the Mewaldts for their efforts. Council agreed and appointed Leschner to undertake.

16. *Membership List Sale*: Harrison stated that PSG had been approached about buying the membership list. Discussion ensued, with a conclusion that since the membership list is already available through the directory, we may as well sell it if someone offers to pay. However, the decision to sell should be on a case-by-case basis to avoid potential problems or conflicts with the intent of an individual organization.

17. *1984 Elections*: The Elections Committee each year is composed of Regional Representatives. Fefer was reappointed Elections Committee Chairman for 1984.

18. *PSG Mailing Address*: The problem of mail sent to PRBO (PSG's permanent address) was discussed. Some mail is not forwarded to the intended individuals for several weeks or months. Boekelheide *MOVED* that the Secretary send a sheet of labels with the new Chairman's address to the PRBO each year to minimize this problem. Forsell *SECONDED*. *MOTION PASSED* unanimously.

19. *Motion to Adjourn*: Leschner *MOVED* to adjourn; Hand *SECONDED*. *MOTION PASSED* unanimously.

Harrison reconvened the Executive Council at 6:00 p.m., 6 January 1984. Council members present included Craig Harrison, Judith Hand, Sue Quinlan, Enriqueta Velarde, Bob Boekelheide, and Jeff Froke. Hand held proxies for Erica Dunn and Joe Strauch. Doug Forsell present in proxy for Tony DeGange. Quorum present.

Harrison announced that CWG had qualms regarding the change of the joint meeting from Washington, D.C., to San Francisco. They wish to have a reciprocal agreement to meet on the east coast following the San Francisco meeting and a fairly definite date set for such a joint meeting.

Discussion ensued regarding the importance of scheduling meetings such that two "far-away" meetings were not in consecutive years—such as Alaska and Washington, D.C. Also, joint meetings should not be held in consecutive years. The year 1988 was considered a good year for meeting in Washington, D.C., since it would be an election year. Also, Washington, D.C., offers lots of possibilities for cheap accommodations such as the National 4-H Center, which costs about $35.00/day with meals. Washington, D.C., also offers the Smithsonian Collections and National Zoo as attractions. Froke suggested that the National Audubon Society might be willing to help sponsor a joint meeting in Washington, D.C. CWG representatives indicated that about 75-100 people normally attend their meetings. Only 30 or so would likely attend a west coast meeting, although their membership is geographically dispersed. A similar number of PSG members at an east coast joint meeting could be expected.

Froke *MOVED* that PSG meet jointly with the Colonial Waterbird Group in Washington, D.C. in late 1987 or 1988, with a date to be set two years in advance. Leschner amended motion to read "with a date to be set by a joint meeting of the PSG and CWG councils at the 1985-86 meeting in San Francisco." Hand *SECONDED* the *MOTION* as amended.

No discussion; the *MOTION PASSED* unanimously. Hand *MOVED* to adjourn. Froke *SECONDED. MOTION PASSED* unanimously.

Respectfully submitted,
Susan E. Quinlan,
Secretary

TREASURER'S REPORT – 1983

Carryover from 1982 (Savings: $6,529.75, Checking: $1,494.41)	$ 8,024.16
Expenses:	
Bulletin costs (incl. office expenses for Springer and Strauch, postage, printing)	1,650.25
Officers' expenses	268.61
Hawaii Annual Meeting:	6,229.88
General Office Expenses	447.42
Asilomar Annual Meeting:	
Advance to Asilomar Conference Grounds	800.00
Advance to Local Committee	300.00
Dues to I.C.B.P.	100.00
Seabird Symposium Expenses	170.00
Service Charges on Accounts	43.86
Total	(10,010.02)
Income:	
Dues and Sales of Back Issues	3,549.00
Income from Hawaii Annual Meeting	6,654.00
Interest on Savings	557.78
Miscellaneous	235.53
Total	11,016.31
End of Year 1983 (Savings: $7,117.15, Checking: $1,913.30)	$ 9,030.45

Increase over 1982: $1,006.29

Although we don't make any money on annual meetings, we don't lose any either, which is a nice change from most organizations. The rather substantial end-of-year balance will be used primarily for printing various symposium volumes and the membership directory. Members will be receiving dues notices soon. Be prepared!

1984 Annual Meeting

The 1984 Annual Meeting of the Pacific Seabird Group will be held in Long Beach, California, on Friday - Sunday 14-16 December 1984. All scientific sessions will be held at the Hyatt Regency, Long Beach. This new hotel is on the scenic waterfront with nearby marina village shops and restaurants and Shoreline Park, which includes an RV camping area. Long Beach is also the home of the QUEEN MARY and the recently opened exhibit of Howard Hughes' "Spruce Goose" aircraft. Dr. Charles T. Collins and Dr. Stuart L. Warter, California State University, Long Beach, are heading the Local Committee. Full registration details will be mailed out to PSG members in late summer. Plan to attend!

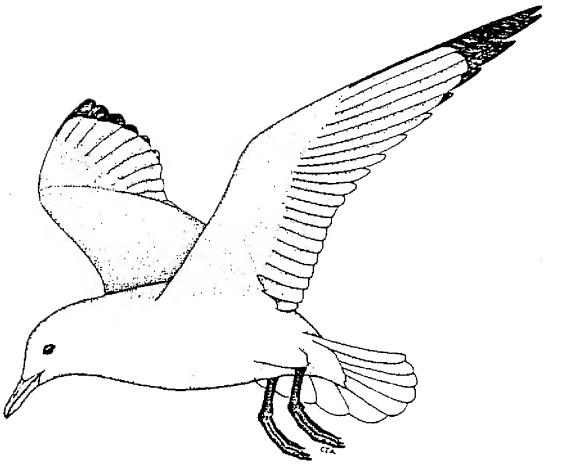
Deadlines for the Next Bulletin

The Editor plans to get the Bulletin back on schedule with the next issue. The deadline for all copy is thus 15 May. Since the next issue will be built around the reports of the Regional Representatives, it is important that all members send information on research activities to the appropriate Representative at once. See the inside of the back cover for the name and address of your Representative. All members in the Pacific (other than Hawaii) should send their information to Craig Harrison; all members east of the Mississippi should send their information to Ron Naveen; and all members in other nonregional areas (west of the Mississippi except for the Pacific coast) should send their information to Kenneth T. Briggs. All information on conservation should be sent to the Chairman of the Conservation Committee, Dr. Kees Vermeer, Inst. Ocean Sci., P.O. Box 6000, Sidney, BC V8L 4B2, Canada.

Acknowledgments

The Editor thanks Roger Clapp and Cherry Keller for making copies of the illustrations from the first volume of "Marine Birds of the Southeastern United States and Gulf of Mexico" available for use in the Bulletin. All of these figures were drawn by Charlotte Adamson. Thanks also to Mark Rauzon and Betsy Robinson for contributing artwork.

I thank Betsy Strauch and Esther Goodyear for their work on editing and typesetting this issue of the Bulletin and especially for the demanding work they both did on the production of the International Membership Directory. Thanks to Craig Harrison for initiating the directory and to Brian Belt (Australasian Seabird Group), John Cooper (African Seabird Group), Chris Mead (The Seabird Group), Iola Price (Colonial Waterbird Group), and Douglas Siegel-Causey (Pacific Seabird Group) for providing membership lists.



THE PROGRAM CHAIRMAN'S COMMENTS
TENTH ANNUAL MEETING
Asilomar, California
5-8 January 1983
Judith Latta Hand

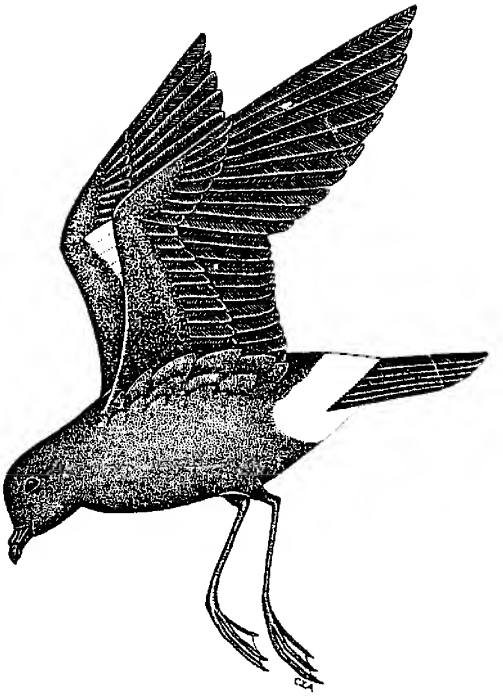
The Tenth Annual PSG Meeting was held at a traditional site, Asilomar. The weather was beautiful, the accommodations quite comfortable, and the food greatly improved over the fare offered in earlier years at Asilomar.

A meeting highlight was a Tenth Anniversary Review by our first Chairman, Michael Scott, of the founding of PSG, of its maturation during its first ten years, and his visions of what our goals might be in the future. There were 50 papers; this compares favorably with the 53 papers at the 1982 Seattle meeting and 44 papers in Hawaii last year. Three excellent slide shows were presented. The photographer Franz Lanting gave an illustrated presentation on "The Life History of Laysan Albatross" which he had photographed for GEO Magazine. Joseph Jehl gave us an "Update on Mono Lake" that well depicted the beauty of that region. Raymond Pierotti presented a slide show illustrating an hypothesis for "Isolating Mechanisms in Seabirds" that was both informative and pleasing to the eye. The photo contest first prize of $50.00 went to Franz Lanting for a photo of Laysan Albatross and the second prize of $25.00 to Elizabeth Flint for a photo of a Fairy Tern.

Perhaps the most novel occurrence was that the Report to the Membership of the Seabird/Fisheries Committee chaired by George Hunt had to be held by fireplace light due to a power failure.

The weather was fine for the field trips. There was a pelagic boat trip and trips to Monterey Peninsula shoreline and Elkhorn Slough, San Francisco Bay National Wildlife Refuge, and Monterey Bay Aquarium.

I wish to express my heartfelt gratitude to Dick and Fran Mewaldt, who served as local organizers for the meeting, and to the members of their committee on arrangements: David Ainley, Alan Baldridge, Robert Boekelheide, Kenneth Briggs, Bessie Cogswell, Howard Cogswell, Terry Hart, Burr Heneman, Roger Johnson, Roy Lowe, Raymond Pierotti, Michael Rigney, and Peg Woodin. Many thanks to all of you.



ABSTRACTS

CALIFORNIA SEABIRD POPULATION CHANGES EARLY IN THE 1982-83 EL NIÑO EVENT

Briggs, Kenneth T., David B. Lewis, and W. Breck Tyler. Center for Coastal Marine Studies, Univ. California, Santa Cruz, CA 95064

The onset of "El Niño" conditions in the eastern tropical Pacific during 1982-1983 was paralleled by changes in hydrographic conditions off California. During MMS-funded offshore aerial surveys we assessed coincident changes in populations of seabirds off central and northern California through January 1983, and in July 1983 made a synoptic survey of colony attendance among murres, cormorants, and gulls. These data were compared to similar information gathered each month since January 1980.

Overall seabird density and biomass were much lower in autumn-winter 1982-83 than in the preceding two years. Numbers of winter visitors/residents from colonies in the Pacific Northwest and Alaska were particularly low. Arrival of some winter residents was delayed, and kittiwakes and fulmars, in particular, concentrated farther north than usual. By summer 1983 numbers of murres at California colonies were greatly reduced, reversing a trend of rapid population growth. Increased thermocline depth and dispersal of prey patches during storms may account for low standing stocks of diving birds.

FARALLON ISLAND SEABIRDS AND THE 1983 EL NIÑO

Boekelheide, Robert J., Teresa McElroy, and Harry R. Carter. Point Reyes Bird Observatory, 4990 Shoreline Highway, Stinson Beach, CA 94970

The 1982-83 eastern Pacific warm water event influenced all Farallon Island breeding seabirds. During the year from October 1982 to September 1983, sea surface temperatures

at the Farallones averaged greater than 1.2°C above mean monthly values for the preceding 10 years, and some daily temperatures during the critical upwelling period in April and May 1983 exceeded monthly means by over 3°C. Important prey populations, especially euphausiids and juvenile rockfish (*Sebastes* spp.), were absent from the diets of Farallon birds during most or all of the 1983 breeding season. All alcid and cormorant species suffered total or near-total breeding failure, due mostly to decreased colony attendance, failure to lay eggs, and widespread nest abandonment during incubation. Least affected were Western Gulls and Ashy Storm-Petrels: the gulls because of increased reliance on food from human sources and the storm-petrels because of their possible ability to lengthen the distance and duration of foraging trips between nest visits. During this El Niño year, as in the previous 12 years of PRBO research, Farallon birds have shown extreme sensitivity to changes in oceanic patterns and prey availability.

EL NIÑO IN OREGON

Graybill, Michael, Janet Hodder, Range Bayer, and Bob Loeffel. Oregon Institute of Marine Biology, Univ. Oregon, Charleston, OR 97420 (Graybill and Hodder); 423 S. W. 9th, Newport, OR 97365 (Bayer); ODFW, Newport, OR 97365 (Loeffel)

Observations of seabirds nesting in Oregon during 1983 were compared to those made in previous years to determine whether local oceanographic anomalies linked to the 1982-83 Southern Oscillation influenced nesting success. Data were available for all of Oregon's nesting seabirds except Fork-tailed Storm-Petrels and Marbled Murrelets. Observations confirmed that all other species known to breed in Oregon attempted to nest. Nesting success of these species is discussed. Leach's Storm-Petrels, Western Gulls and Pigeon Guillemots did not appear to be dramatically affected. Common Murres approached total nest failure and Brandt's and Pelagic cormorants appeared to be dramatically affected, although all three species managed to fledge some chicks, albeit far fewer than in previous years. The outcome of the 1983 season for Double-crested Cormorants, Cassin's Auklets, Rhinoceros Auklets, and Tufted Puffins is unclear due to insufficient data. All of these species are presumed to have fledged at least some chicks, since they were observed to be on the colonies throughout the season. This is the first time that the Southern Oscillation has been shown to influence the nesting success of Oregon's seabirds.

THE EFFECT OF SAMPLING DESIGN ON ESTIMATES OF REPRODUCTIVE SUCCESS

Newman, Audrey. U.S. Fish & Wildlife Service, Hawaiian Islands National Wildlife Refuge, P.O. Box 50167, Honolulu, HI 96850

In order to monitor changes in the reproductive success of seabirds, it is important to determine the proper variance and confidence intervals associated with the mean success rates observed in study nests. The proper equations depend on the sampling methods used to select the study nests. Four commonly used sampling methods are representative sampling, simple random sampling (SRS), clustered random sampling, and stratified random sampling. Hypothetical examples are used to illustrate the large potential effect of each of these sampling methods on the variance and confidence intervals for a single set of reproductive success data. For representative samples, statistical estimates of variance and confidence intervals are not possible. For a typical clustered random sample, the 95% confidence interval was twice as wide as the simple random sample interval when the covariance between success and cluster size was moderate. However, the clustered sample's interval was reduced to half the SRS interval when

the covariance was high. Stratified sampling reduced the SRS confidence interval only slightly. These results illustrate how inappropriate use of SRS estimates can affect the sensitivity and reliability of seabird monitoring programs. Draft guidelines for sampling reproductive success nests are presented for discussion.

MANAGEMENT OF AVIAN POX AND LEAD POISONING OF LAYSAN ALBATROSS AT MIDWAY ISLANDS, NORTHWESTERN HAWAIIAN ISLANDS

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Avian pox and lead poisoning have been recorded in relatively large numbers of Laysan Albatross chicks on Midway Islands during 1983. Epizootic avian pox was reported on Sand Island, Midway, in Red-tailed Tropicbirds during 1961, and in Laysan Albatross in 1978. A disease management program was recommended in 1978, and no major outbreaks occurred until 1983, when epizootic pox recurred in Laysan Albatross on Sand Island and the disease was found for the first time on Eastern Island. Following a field investigation, procedures were reestablished to control this disease. In 1982 and 1983 significant numbers of Laysan Albatross chicks near fledging were found dead or dying. Investigation indicated that lead poisoning was the primary cause of death in a sample of these birds. Ingestion of paint chips was determined to be the major source of the lead. Removal of these paint chips from Midway Island would help to minimize future incidence of lead poisoning.

TOXICITY OF INGESTED PRUDHOE BAY OIL TO HERRING GULLS AND ATLANTIC PUFFINS

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Herring Gulls and Atlantic Puffins ingesting 10 ml per kg per day of a Prudhoe Bay crude oil suffered a precipitous and massive toxic destruction of red blood cells after 4-5 days. Oxidant biochemical damage correlated with Heinz-body formation and extensive membrane damage in red cells. Similar damage occurred in the blood of some birds ingesting oil for only two days. Possible mechanisms of toxicity and problems with determining effective dose will be discussed.

REDUCED REPRODUCTION OF WEDGE-TAILED SHEARWATERS EXPOSED TO A DOSE OF 2 ML WEATHERED CRUDE OIL

Fry, D. Michael, C. R. Grau, and J. Swenson. Dept. Avian Sciences, Univ. California, Davis, CA 95616

The reproductive success of Wedge-tailed Shearwaters breeding on Manana Island, Hawaii, was followed throughout 1983. Two hundred forty pairs of shearwaters were banded in natural burrows in a 3,600 m^2 study plot during May and early June prior to their pre-laying exodus. Sixty-two pairs were administered 2 ml weathered Santa Barbara crude oil orally by gelatin capsule at the time of banding. Sixty-one pairs were dosed externally with 2 ml weathered oil on the breast plumage. An additional 92 pairs laid eggs in marked burrows

before banding and were followed as additional controls. Sixty-six percent of control birds returned and laid eggs in marked burrows. Thirty-two percent of oral and 16% of externally dosed pairs laid. Hatching success and growth rates of chicks of control and oral dosed birds were not different. No eggs of externally dosed birds hatched. Toxic effects of weathered crude oil will be discussed. This work was supported by Minerals Management Service, U.S. Dept. Interior, Contract #14-12-0001-29112/SB0408(a)-81-C-0509 awarded to Nero & Associates, Portland, Oregon

REPRODUCTION AND ORGANOCHLORINES IN TERNS AT SAN DIEGO BAY

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In 1981, we studied Caspian Terns and Elegant Terns nesting at the south end of San Diego Bay, California. The objectives of the study were to 1) determine whether organochlorine pollutants were adversely affecting reproduction of Caspian Terns; 2) compare organochlorine concentrations in eggs of Caspian and Elegant terns from the same colony; 3) determine organochlorine concentrations in fish brought to Caspian Tern chicks by their parents; and 4) determine whether organochlorine pollutants were causing mortality of adult fish-eating birds in the vicinity of the colony. Randomly collected Caspian Tern eggs contained significantly higher concentrations of DDE (Geometric Mean 9.30 ppm) than did Elegant Tern eggs (G.M. 3.79 ppm). Caspian Tern eggshells collected since 1947 were significantly thinner than those collected earlier. Reproduction of Caspian Terns was about equal to the lowest level considered adequate to maintain the population. Eggs of Caspian, Elegant, and Forster's terns had chicks that died while hatching. Fish brought to Caspian Tern chicks contained up to 3.0 ppm DDE and 1.1 ppm PCB's. Organochlorine concentrations in brains of birds found dead were not high enough to suggest such poisoning as a cause of death.

THE DEVELOPMENT OF THERMOREGULATORY ABILITIES IN XANTUS' MURRELET CHICKS (*Synthliboramphus hypoleucus*)

Eppley, Zoe. Dept. Biology, California State Univ., Fullerton, CA 92634

Thermoregulatory abilities of Xantus' Murrelet chicks from hatching to two weeks of age were investigated in the laboratory. Newly hatched Xantus' Murrelet chicks adopt a pelagic existence, and chicks less than a week old are constantly exposed to ambient temperatures below their lower critical temperature. The basal metabolic rate (BMR) of hatchlings (mean body mass, 24.8 g) was 8.65 $cal(g \cdot h)^{-1}$, similar to the value predicted for adult nonpasserine birds of comparable size. Hatchlings increased their metabolism to 3.5 times BMR at cooler temperatures. BMR increased by a factor of 2.7 during the next two weeks. Thermal conductance of hatchlings was 2.6 times the value predicted for adult nonpasserine birds of comparable size, but approached predicted values within four days. The large drop in conductance occurred around the age when chicks go to sea (2-4 days old) without concomitant changes in mass or plumage, and may be associated with increasing vasomotor control. At three days of age, chicks experienced similar rates of heat loss in chilled seawater compared to dry air, showing no difference in either metabolic rate or body temperature under the two conditions. Murrelet chicks used partial hypothermia at low temperatures to reduce energetic costs. They showed tolerance of severe hypothermia, sustaining T_b's as low as 26 C without motor impairment. The quantitative features of Xantus' Murrelet thermoregulatory system are compared to other birds along taxonomic and ecological lines.

NATURAL VARIATION IN BLACK NODDY EGG SIZE

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Egg size depends on many aspects of a bird's environment, and it may provide an integrated picture of a bird's condition prior to egg-laying. To use egg size as an effective index of the pre-laying condition of seabird populations, natural variation in egg measurements must be both low and predictable. The length, breadth, volume index, and shape index of Black Noddy eggs were determined throughout the nesting season on Tern Island, French Frigate Shoals (FFS), in 1981 and 1982. Egg volumes declined approximately 2% per month in both years. Egg length and breadth declined less consistently. Egg shape did not vary significantly over the season. Annual variation was low; least squares annual means for all four egg size measures differed by less than 1%. Eggs measured during brief visits to Laysan and Lisianski islands in 1981 differed only in shape from eggs laid on FFS in the same month. Differences in population age structure may be responsible for these island differences. If additional research confirms these results, egg size measurements may be a useful monitoring tool, especially for remote colonies that are infrequently visited.

THE LIFE HISTORY CONSEQUENCES OF BEING A PELAGIC SEABIRD

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Pelagic seabirds normally nest in dense aggregations because their nesting habitat (islands) is very restricted in relation to the size of their feeding area (the ocean). These concentrations of birds tend to deplete food resources in their immediate vicinity so that some individuals must travel long distances to feed, hence restricting the rate at which food can be delivered to the chick. This restriction determines the low reproductive output of seabirds, irrespective of other environmental constraints. However, a low reproductive output does not mean a low reproductive investment. Calculations for pelagic Thick-billed Murres breeding in large colonies suggest that their energy investment in reproduction is just as great as that of inshore-feeding Black Guillemots breeding in small colonies.

MONO LAKE REVISITED: THE BREEDING FAILURE OF CALIFORNIA GULLS IN 1981

Jehl, Joseph R., Jr., Hubbs-Sea World Research Institute, 1700 South Shores Rd., San Diego, CA 92109

In the spring of 1981, brine shrimp populations at Mono Lake were low, and in the subsequent California Gull nesting season over 90% of the chicks failed to fledge. This event drew wide attention, and it was widely reported that the chicks had died of starvation. In this talk I will critically examine the evidence for the food-shortage hypothesis and discuss alternative explanations for the event. I will also discuss the need for extreme caution in the use of "scientific" data in political debates.

POPULATIONS AND PRODUCTIVITY OF BLACK-LEGGED KITTIWAKES AND PELAGIC CORMORANTS ON MIDDLETON ISLAND, 1974-1983

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We investigated Black-legged Kittiwake and Pelagic Cormorant populations on Middleton Island, Gulf of Alaska, for six years between 1974 and 1983. The number of kittiwake nests varied between 55,600 in 1983 and 88,500 in 1981. Low numbers of nesting pairs in 1983 were concurrent with a low mean clutch size (1.5 eggs/nest with eggs), a high number of nests which never contained eggs (0.61 nest with eggs/nest built), and an almost complete breeding failure (0.02 fledgling /nest built). Kittiwakes have consistently had very low reproductive success on Middleton Island. This plus the tenfold increase in numbers between the 1950's and 1970's and the variation in number of breeding pairs each year suggests a population just past the asymptote of an expanding population curve. Pelagic Cormorant productivity was much more consistent from year to year, and 1983 was, if anything, one of their best. Surface waters of the Gulf were warmer than normal in 1983, an El Niño year as was 1976, which along with other climatic and oceanographic anomalies may have differentially affected food availability between offshore surface feeders like kittiwakes and inshore divers such as cormorants.

EFFECT OF COLONY SIZE ON SEABIRD REPRODUCTION

Hunt, George L., Jr., Zoe Eppley, and David Schneider. Dept. Ecology and Evolutionary Biology, Univ. California, Irvine, CA 92717

We compared reproductive ecology of seabirds on St. Paul Island and St. George Island in the Pribilof Islands, Alaska. The density and aggregation of foraging birds were greater around St. George Island, which supports 10 times as many birds as St. Paul Island. Red-faced Cormorants, Black-legged Kittiwakes, Common Murres, and Thick-billed Murres had lower chick growth on the larger colony, and departure weights of the chicks of both species of murre were also lower on the larger colony. Fledging date was delayed for Red-faced Cormorants and Red-legged Kittiwakes on St. George Island. In an analysis of reproductive data from 22 colonies in the Northern Hemisphere there was a consistently negative relation between colony size and clutch size, chick growth, fledging weight, and chicks fledged. If birds in large colonies are under greater food stress than those attending small colonies, then individuals in large colonies will be affected more by human competition for fish stocks.

WINTER COLONY ATTENDANCE BY MURRES

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In east Scotland, Common Murres (*Uria aalge*) are increasing by 5-10% per annum and spending more time at the colonies during the winter. Conditions are obviously favorable, but a growing sand lance fishery threatens their food. We used time-lapse photography to follow winter attendance, assuming that if food becomes scarce birds will spend less time ashore. Both male and female successful and failed breeders visit their nest sites on many days in October-November, less frequently in December-January, and then with increasing frequency until laying. Birds return at dawn and stay from 30 min to all day. In February 1983, tens of thousands

of auks starved, and our cameras showed that no murres visited colonies during the 10 days prior to birds being found dead. We are keeping birds off sites during the winter and following their subsequent behavior to try to determine the advantage of spending so much of the non-breeding season at the site.

THE INFLUENCE OF A HIGH PREBREEDING SEASON MORTALITY ON THE 1983 BREEDING BIOLOGY OF PIGEON GUILLEMOTS IN COOS BAY, OREGON

Hodder, Jan, and Michael Graybill. Oregon Institute of Marine Biology, Univ. Oregon, Charleston, OR 97420

An unusually large die-off of Pigeon Guillemots occurred in Oregon during early April 1983 just prior to the onset of the breeding season. The breeding biology of a population of Pigeon Guillemots nesting under an abandoned dock in the Coos Bay estuary was studied to examine possible influences of this mortality. Data from the 1983 nesting season were compared with those of 1982. The early season mortality appeared to reduce the number of nesting birds: 89 pairs nested in 1983 compared with 111 pairs in 1982. The timing of the nesting season was later in 1983 than in 1982. The die-off did not affect chick development, as growth rates were not significantly different from 1982. Mean clutch size was lower, as a significantly higher percentage of one-egg nests occurred in 1983 than in 1982, but mean number of chicks fledged/nest was similar for both years. The success rate of one-egg clutches was also similar, although two-egg clutches had a significantly higher success in 1983 than in 1982. It appears that those Pigeon Guillemots which survived the prebreeding season die-off were able to acquire sufficient reserves for a successful breeding season in 1983. This work was partially supported by a grant from the Non-Game Wildlife Fund of the Oregon Department of Fish and Wildlife.

FEEDING HABITS AND NESTING SUCCESS OF SEABIRDS IN CHINIAK BAY, KODIAK ISLAND

Krasnow, Lynne D. College of Oceanography, Oregon State Univ., Corvallis, OR 97331

The feeding habits and nesting success of Glaucous-winged Gulls (*Larus glaucescens*), Black-Legged Kittiwakes (*Rissa tridactyla*), and Tufted Puffins (*Fratercula cirrhata*) in Chiniak Bay were studied from May to August 1983. Comparisons with previous studies indicated that the nesting success of each species was lower than in 1977 or 1978. Gulls nesting on Zaimka Island fledged an average of 0.02 chick per nesting pair in 1983 compared to 1.15 in 1977 and 0.74 in 1978. Kittiwakes initiated egg laying two weeks later than in 1977 or 1978, and none of the eggs laid at Kulickikof Island survived until hatching. Productivities at this colony in 1977 and 1978 were 1.23 and 0.77 chicks fledged per nesting pair, respectively. Puffins on Cliff Island fledged an average of 0.61 chick per pair in 1983 compared to 0.80 in 1977 and 0.76 in 1978.

The unusual mortality of kittiwakes reported by fishermen in the second half of August was attributed to starvation. Warm surface-water temperatures may have altered the distribution of key prey species. Capelin (*Mallotus villosus*) was less important in the diets of kittiwakes and puffins than in 1977 or 1978, and both species of seabirds expanded their diets to include more species of fish and invertebrates. Due to their greater diving range, puffins may have been more adept than kittiwakes at finding alternate prey. The feeding habits of adult Glaucous-winged Gulls were not studied in 1977 or 1978, but in 1983 the diet of this species consisted mostly of intertidal invertebrates.

CHANGES IN PIGEON GUILLEMOT FORAGING PATTERNS, PREY, AND BREEDING SUCCESS ASSOCIATED WITH WEATHER CONDITIONS

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Breeding Pigeon Guillemots at 3 colonies (5-15 pairs each) within 1 km of each other were monitored from 1979-1981 at Naked Island, Prince William Sound, Alaska. Inclement weather increased each year, with 1981 highest in rainfall, strong northerly winds, and rough seas. Paralleling these events were changes in foraging patterns, prey species, feeding rates, and breeding success. Birds from the same colony tended to forage in the same general area, with very little overlap between colonies. Colony forage areas were basically the same all three years, but there was a shift in intensity of use; foraging within 200 m of the colony accounted for only 9% of all 1979 observations, increasing to 21% in 1980 and 35% in 1981. There was a marked reduction in the use of areas $>$ 600 m offshore in 1981. Sand lance was the predominant prey returned from nearshore shallow waters in 1979 and 1980, but in 1981 most birds returned more bottom-fish species from the same areas. Sand lance availability may have been directly influenced by weather; in 1981 there was a positive correlation between rough seas and the percentage of bottom fish in total daily returns. Despite foraging closer to their colonies, the birds' trip times were greater in 1981 for all prey species except sculpin and were significantly greater for birds returning sand lance. In addition, feeding rate decreased from 1.06 fish/hr/nest in 1979 to 0.86 in 1980 and 0.65 in 1981. There was a corresponding decrease in nesting attempts and breeding success each year.

INTER-COLONIAL VARIATION IN RHINOCEROS AUKLET NESTLING FOOD HABITS AND GROWTH IN WASHINGTON

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We studied the diet and growth of Rhinoceros Auklet chicks during seven breeding seasons, between 1974 and 1983, at the three main colony sites of Washington: offshore - Destruction Island, inshore - Protection Island and Smith Island. We found significant differences in Rhinoceros Auklet nestling diets and growth between the offshore and inshore auklet populations. Chicks on Protection Island were consistently reared primarily with sand lance, while major prey species varied between years on Destruction Island, where northern anchovy, rockfish, sand lance, herring and night smelt were most often utilized. During 1983, when a warm-water anomaly developed off the Washington outer coast, Pacific saury became a major prey item for auklet chicks on Destruction Island. Rhinoceros Auklets on Protection Island seemed unaffected by this unusual ocean condition and raised their young on an abundant supply of sand lance. On Protection Island chicks were consistently fed heavier food loads than on Destruction Island. Nestlings from Protection Island and Smith Island also reached higher peak weights and fledged heavier than chicks on Destruction Island. Differences in the climates and marine environments of the offshore and inshore auklet populations of Washington, presumably responsible for these variations, are discussed.

COMPARATIVE TROPHIC RELATIONSHIPS BETWEEN SOOTY AND SHORT-TAILED SHEARWATERS IN THE GULF OF ALASKA

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Sooty and Short-tailed shearwaters were collected over the continental shelf of the northern Gulf of Alaska from late spring through early fall, 1977-78. Data pooled from 187 Sooty Shearwater stomachs revealed a percent volumetric composition of 95% fish (including 84% capelin and 6% Pacific sand lance), 3% euphausiids (*Thysanoessa* spp.), and 2% cephalopods, while 228 Short-tails contained 51% fish (including 46% capelin and 2% sand lance), 46% euphausiids, and 2% cephalopods.

A scheme for assigning relative trophic levels to prey is proposed. The diets of seabird prey in the Gulf of Alaska are little known, but a hypothetical view of the trophic levels of the two shearwaters' prey based on this scheme and inferred from data from elsewhere suggests that Sooties fed about one trophic level higher than Short-tails, on average. It is important to know the diets of different size classes of a given prey species. This knowledge must be considered, along with the influence of biological and physical processes in the sea and how these affect development of trophic organization along alternate pathways,to improve our concepts of what "trophic relationships" really are. Possible consequences to the trophic structure of the birds' food webs from anticipated fisheries for capelin and Pacific sand lance are discussed as an illustration.

FACTORS AFFECTING DIETARY SWITCHES IN ECOLOGICAL GENERALISTS

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Factors which affect major changes in the diets of organisms have been a focus of foraging theory. Traditionally, either the relative or absolute abundance of specific food types has been presumed to be the principal cause of dietary switches. Our observations on two species of gull (*Larus argentatus* and *L. occidentalis*), however, suggest that the major causes of dietary switches in gulls are a) the appearance of chicks in the nest, and b) the increase in size of chicks. Parent gulls switch from garbage or intertidal food to fish immediately upon the hatching of their chicks. If larger prey species are abundant, adults will not switch to these foods until the chicks reach of weight of 400-500 g. This suggests that the food demands of chicks rather than energy intake determines the diets of adult gulls during the breeding season.

SPECIALIZATION AND REPRODUCTIVE OUTPUT IN AN ECOLOGICAL GENERALIST

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Gulls are traditionally considered to be ecological generalists, exploiting a wide range of food types. We found that although Herring Gulls (*Larus argentatus*) on Great Island, Newfoundland, exploited a wide range of foods as a population, individual birds (and pairs) acted as specialists, exploiting only single sources of food, e.g., garbage, petrels, or intertidal organisms (principally mussels, *Mytilus edulis*). The type of food upon which an individual specialized appeared to have a pronounced effect upon clutch size, clutch mass, hatching success, and fledging success. Birds foraging on garbage were consistently the least successful,

whereas birds foraging intertidally were most successful. The type of food exploited appeared to be independent of age. Based on our results, we suggest a new component of foraging theory with fledged offspring substituted for energy intake/unit time as the currency of choice.

SEXUAL DIFFERENCES IN PREY SELECTION BY COMMON MURRES DURING THE CHICK-FEEDING PERIOD

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Pairs of Common Murres (*Uria aalge*) on SE Farallon Island were sexed by observing copulatory position. We identified individuals of each pair by distinct plumage differences. We conducted all-day watches during the chick periods of 1982 and 1983, noting prey returned by each member of the pair and the amount of time spent away from the nest on feeding trips. The average number of prey returned to chicks was significantly less ($p < 0.005$) in 1983, a warm-water year. Occurrence of the two major prey species also differed between the two years. Juvenile rockfish (*Sebastes* sp.) were most abundant in 1982 but were reduced in importance in 1983; northern anchovy (*Engraulis mordax*) were the most common prey item in 1983. The amount of time required to capture and return either prey species indicated no difference between the sexes. The mean amount of time per feeding trip was greater for anchovy than for rockfish. In 1982, males fed more anchovies per chick than females ($p < 0.05$) and females tended ($p < 0.2$) to bring in more rockfish than males. In 1983, no differences in prey selection existed between males and females. These data will be discussed with regard to parental investment.

FEEDING ECOLOGY OF THE COMMON MURRE OFF THE OREGON COAST, 1979-1982

Matthews, Dan R., and D. H. Varoujean. Oregon Institute of Marine Biology, Univ. Oregon, Charleston, OR 97420

Common Murres were censused and collected along the Oregon coast. Strip transects were conducted off Newport and the Columbia River in 1982 and off Coos Bay from 1979 to 1982. Density estimates were made, and feeding analyses were done by examining stomach contents, primarily otoliths and cephalopod beaks. Six hundred thirty-five murres were collected. Diet included 37 species of fish, crustaceans, and cephalopods. Opportunistic feeding is strongly suggested by diet diversity. The diet varied from location to location, as well as seasonally and annually off Coos Bay. Density estimates indicate similar murre densities in the three study areas in 1982. However, density off Coos Bay was 127 murres/km^2 in 1981, but only 41 murres/km^2 in 1982. It is proposed, from feeding analyses, that differences in prey availability between 1981 and 1982 resulted in these density differences. In addition, it was found that there was a significant difference in adult body weight in the three study areas.

GREAT FRIGATEBIRD PREDATION ON SOOTY TERN CHICKS

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Frigatebirds are known to prey on *Sterna fuscata* chicks. We found that female adult and subadult *Fregata minor* on Midway Island were responsible for virtually 100% of the tern

chick predation. Most predation occurred in the morning and late afternoon. Females and subadults spent the same amount of time foraging, and the actual number of tern chicks consumed per foraging bout was the same. However, subadults foraged more intensively: they caught more chicks per bout, but also lost more chicks, either by dropping or by piracy. Foraging intensity was greatest in the moderately vegetated tern habitat where most terns nested, but foraging efficiency was greatest in the open habitat. Frigatebird foraging efficiency declined as tern chicks grew older.

TECHNIQUES FOR LOW-MAINTENANCE, LONG-TERM DATA COLLECTION USING TIME-LAPSE PHOTOGRAPHY

Irons, David B. U.S. Fish & Wildlife Service, Anchorage, AK 99503

Time-lapse photography is a relatively low-cost and low-effort method of collecting biological data. The period of time a roll of film will last is the limiting factor as to how long a camera can run without attention. Most movie cameras have a maximum time-lapse interval of one frame per minute, which allows a roll of film to last up to 2½ days. Another limiting factor is battery life. Batteries last up to several days.

Recently we developed techniques that permit a camera to operate up to eight months without attention. The period of time a roll of film will last can be increased by lengthening the interval between photographs with an inexpensive external intervalometer. The addition of a solar panel increases battery life.

These techniques drastically reduce effort needed to maintain time-lapse cameras, thereby greatly increasing the possible uses of time-lapse photography for collection of biological data.

TECHNIQUES TO CAPTURE AND RADIO-TAG MARBLED MURRELETS: PRELIMINARY RESULTS

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Fieldwork was conducted in Kelp Bay, Baranof Island, in southeast Alaska from 7 May to 15 June 1983. Eight Marbled Murrelets were captured using a net gun from a Zodiac raft. Captured murrelets were measured, banded, and fitted with 10-gm radio transmitters using three attachment techniques: backpack straps, sutures, and implantation. A widely used avian anesthetic, ketamin, was used to sedate murrelets for surgery. Murrelets were sensitive to handling, required a high drug dosage to obtain the desired sedation, and had a long recovery period. Transmitters attached by backpack had a 4-4.8 km range, ground to ground. Implanted transmitters had a range of 0-1.2 km, depending on placement in the abdominal cavity. Radio-tagged murrelets moved 0.8-9.6 km. Unusual behavior by radio-tagged murrelets provoked attacks by Bald Eagles.

CATALOG OF ALASKAN SEABIRD COLONIES: AN UPDATE

Slothower, Roger E., and Arthur L. Sowls. U.S. Fish & Wildlife Service, 1011 E. Tudor Rd., Anchorage, AK 99503

The U.S. Fish & Wildlife Service published a Catalog of Alaska Seabird Colonies in 1978. Since then, important new data have been gathered and will continue to be acquired in the

future. Work on archiving data, developing a computer file, and incorporating new and historical data is now being done. The goal is to have the best information available for resource management decisions and scientific study.

To handle the large amount of information, a computer format has been developed which will allow: 1) standard format, 2) continuous updating of information, 3) manipulation and searching of large quantities of data, 4) automated indexing of archived reports, and 5) production of standard and customized reports and maps. The draft computer format is completed, and data on southeastern Alaska have been entered to produce test results. Example maps and reports of localized, regional, and species summaries are shown.

HIGHS AND LOWS OF AERIAL SURVEYS: A METHODOLOGICAL INVESTIGATION

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Since 1975, six major aerial surveys have been conducted using strip transect techniques. Despite pronounced differences in search protocol, little attention has been focused on the ways survey speed, altitude, transect width, and glare affect results. We examined several of these variables by conducting a series of test flights. Experienced observers simultaneously censused seabirds in corridors 50, 100, and 200 m wide at altitudes of 30 m and 60 m under a range of glare conditions.

On average, total seabird density did not vary substantially with survey altitude; however, for small birds (e.g., phalaropes, storm-petrels, auklets) average density was higher on high altitude (60 m) surveys. On glare-affected survey lines, average densities were at least 50% lower than on equivalent glare-free lines. On glare-free lines (any altitude) total seabird density was highest in the narrow (50 m) corridor; additionally, small bird density was lowest in the widest (200 m) corridor. Observers searching wide corridors missed substantial numbers of birds near the plane; for example, they missed 40% to 70% of the birds seen by the narrow corridor observer.

INVESTIGATIONS OF LEAST AUKLET CENSUS TECHNIQUES AT ST. MATTHEW ISLAND, BERING SEA, ALASKA

Sowls, Arthur L., David B. Irons, M. Michele Vacca, and Daria O. Carle. U.S. Fish & Wildlife Service, 1101 E. Tudor Rd., Anchorage, AK 99503

Population size of talus-nesting auklets has proved to be difficult to estimate accurately due to the birds' nesting habits and attendance patterns at the colony. Comparison of various census techniques conducted on Least Auklets at St. Matthew Island, Alaska in 1983 is discussed.

Daily attendance patterns were studied throughout the breeding season using time-lapse cameras, all-day counts, and counts taken during the morning and evening peak activity periods. Daily attendance patterns for the population as a whole were remarkably consistent within each nesting stage, but patterns of individuals appeared highly variable.

A Lincoln-Peterson Index using color-dyed and banded birds proved successful to estimate population size and was compared to Bédard's method of censusing auklets to relate birds present on the surface to actual populations. Actual populations are much higher than the number of birds present on the talus surface at any one time.

AN OVERVIEW OF THE MINERALS MANAGEMENT SERVICE ENVIRONMENTAL STUDIES PROGRAM: SEABIRD STUDIES

Reetz, Gordon A., and Cheryl S. Conel. Minerals Management Service, Los Angeles, CA 90017

The Minerals Management Service of the U.S. Department of Interior is a major funding agency for seabird research in the United States. Studies are funded to meet legal mandates but more often to obtain information for a specific leasing or lease management decision involving environmental risk or impact or a specific program management decision related to outer continental shelf leasing and development of hydrocarbon resources.

Recent or current seabird projects being coordinated by the Pacific Region or in conjunction with other agencies include studies on California seabird colonies, marine mammal and seabird distribution and abundance in southern, central, and northern California, seabird behavior in oil spills, oil toxicity to seabirds, and a population risk analysis for seabirds and marine mammals.

Overall, the Pacific region funded approximately $8 million in marine mammal and seabird research between 1974 and 1982. Three other MMS regions, the Alaska, Atlantic, and Gulf of Mexico, also fund marine mammal and seabird research. Research plans continue. A seabird feeding ecology study is currently planned by the Pacific office for fiscal 1984.

USE OF NEW TIDAL LAGOONS BY SHOREBIRDS (CHARADRII AND SCOLOPACI)

Cogswell, Howard L., and Christopher W. Swarth. Dept. Biological Sciences, California State Univ., Hayward, CA 94542

Birds using three lagoons (89 ha total intertidal area) constructed at mostly upper intertidal levels in abandoned salt evaporators were censused 57 times during the 15 months following first exposure of the area to tides in May 1980. An adjacent 31 ha plot on a mudflat broadly open to bay waters was also censused, usually on the same dates.

Shorebirds of 26 species used the new tideflats, some in large numbers. Highest densities (maximum near 160/ha on Oct. 29) occurred at times of mid-ebb and mid-flood tides or during higher low-water periods when the outer tideflat was mostly or entirely covered by water. All species of shorebirds in the lagoons fed there, apparently on the irregularly developing populations of invertebrates. However, a graphic analysis suggests that low numbers of the more abundant species (Western Sandpiper, Dunlin, dowitchers, Marbled Godwit, Willet) on the lagoons at other times were frequently related to the exposure of the lower portion of the outer tideflat. This is attributed to probable greater availability of prey there. Insufficient data at varied tide levels within seasons preclude sophisticated statistical tests. At high tides most shorebirds used traditional roosts in salt evaporators outside the study area even though five islands were available in the lagoons.

A few Snowy Plovers bred on islands or dikes in both years. Many American Avocets and Black-necked Stilts present the first summer had diminished sharply by the second summer to seven pairs then nesting on two islands.

THE USE OF SALT PONDS BY NON-BREEDING WATERBIRDS IN SOUTH SAN FRANCISCO BAY

Swarth, Christopher W., Dept. Biological Sciences, Diablo Valley College, Pleasant Hill, CA 94523

Non-breeding waterbirds using a series of ten contiguous salt ponds adjacent to the Bay in the San Francisco Bay National Wildlife Refuge, Fremont, California, were censused for 15 months (November 1979 - September 1981). These ponds are shallow, non-tidal, and are used for making salt by evaporating seawater. Salinity among ponds varied from 40 °/₀₀ to 135 °/₀₀. Brine shrimp (*Artemia franciscana*), waterboatmen bugs (*Corixa reticulata*) and brine flies (*Ephydra millbrae*) occur in dense concentrations, and several fish species are found in low-salinity ponds. Waterbirds foraged actively on the water and along pond edges, and also used the area for roosting. Seventy species were recorded, and over 15,000 individuals occurred regularly in mid-winter. During migration the density of some species exceeded 100 individuals per hectare. Comparison of these results with those from a study made on a nearby intertidal portion of the Bay indicates that species differ in their use of these two habitats. Eared Grebes, Black-necked Stilts, Bonaparte's Gulls, Wilson's Phalaropes, and Red-necked Phalaropes used the ponds extensively at all times and were rarely observed on the Bay. Shorebirds used the ponds mainly during the high tide period when the intertidal mudflats were covered. Loons and scoters were common on the Bay but absent from the ponds. Salt ponds are important for a variety of waterbirds, and for some species they are the primary wetland habitat used in south San Francisco Bay.

THE VALUE OF SALTPONDS FOR WATERBIRDS IN SAN FRANCISCO BAY AND CONSIDERATIONS FOR FUTURE MANAGEMENT

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Salt evaporation ponds are a major wetland habitat in coastal California, occupying about 40,000 acres of former tidelands. Their construction contributed to the endangered status of several plants and animals and caused major changes in our avifauna. For these reasons, in part, saltponds have often been held in low regard by wildlife managers, and restoration of tidal action has been advocated, although supporting data were not available. In an effort to establish management goals, we sought to evaluate the current role of saltponds in supporting breeding, wintering, and migrating waterbirds. Thirty monthly aerial surveys conducted in San Francisco Bay from February 1981 through August 1983 revealed that this unique habitat provides feeding, roosting, and nesting sites for a great diversity of waterbirds, frequently in greater concentrations than in other wetland habitats. With the creation of the ponds, a number of species which did not occur historically now rely on this habitat during breeding and migration. The importance of this habitat demonstrates the need for continued management of both tidal and nontidal wetlands in coastal California.

SPECIES DIVERSITY OF SEABIRDS: A REVERSED LATITUDINAL GRADIENT?

Irons, David B. U.S. Fish & Wildlife Service, Anchorage, AK 99503

Several orders of animals are more diverse in tropical regions than temperate regions of the world. Suggestions for this phenomenon are related to a variety of hypotheses for

species diversity (Pianka, 1966). Species diversity of seabirds does not conform to this trend. This paper investigates theories of species diversity and how each might affect diversity of seabirds. Productivity and spatial heterogeneity appear to be important factors. Support for these ideas comes from differences in feeding habits, morphology, and physiology between temperate and tropical seabirds and heterogeneity of nesting areas between tropical and temperate regions.

SEASONAL TRENDS IN "COURTSHIP FEEDING" RATES BY MALE COMMON TERNS

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At many Common Tern colonies, the distribution of clutch starts shows a marked peak early in the season. The ultimate factor controlling this phenomenon is presumed to be the availability of food when chicks are being fed. In 1982, "courtship feeding" rates by males were markedly depressed late in the season compared to those of peak nesters. Accordingly, I predicted for 1983 that reduced feeding rates of late nesters would be reflected in reduced egg and clutch weights. Common Tern parents were observed from a blind during the peak (6-10 May) and late season (10-17 June) at a colony near Port Colborne, Ontario. Most chicks of peak nesters had fledged when eggs were laid by late nesters. There were no differences in the feeding rate patterns between peak and late nesters. In both groups, feeding rates prior to first eggs were similar, and both declined markedly following the laying of second eggs. Weights of 3-egg clutches were also similar. Larger fish were fed later in the season, but in both groups, males adjusted their feeding rates to the size of fish brought. For both peak and late nesters, there were no correlations between feeding rate (or feeding index) and clutch weight. As all females were apparently able to obtain sufficient nutrition to adequately provision their eggs, I conclude that 1983 was an unusually favorable food year for Common Terns at Port Colborne. I suggest that "courtship feeding" be replaced by "demanded feeding" as a phrase more appropriate to the adaptive significance to the behavior.

MALE AND FEMALE PARENTAL ROLES IN A SMALL MAINLAND COLONY OF WESTERN GULLS

Bellrose, Cheryl A. Dept. Wildlife and Fisheries Biology, Univ. California, Davis, CA 95616

Previous studies of Western Gulls have demonstrated that variation in male and female parental roles during breeding may be dependent on population density, habitat choice, and food supply. Data collected on a small mainland colony of Western Gulls at Moss Landing, California, showed that parent gulls significantly altered their behavior and time budgets to reduce potential losses of eggs and young to aerial and terrestrial predators. A superabundant nearby source of food also appeared to influence the patterns observed. Gulls at Moss Landing behaved similarly to other gulls which settle in "unstable" habitats. That is, neither males or females maintained or defended territories prior to egg laying. In addition, the egg laying period and incubation period were reduced, despite an increase in egg size. Male and female Western Gulls behaved similarly during incubation, both spending approximately 85% of daylight hours at the nest site guarding and/or incubating eggs. During the chick period, males were absent from the territory significantly more often than females and were found to feed chicks twice as often as females. Females remained on the territory guarding both their own and neighbors' chicks. Female Western Gulls were equally aggressive as males throughout the entire breeding season in intensity of displays. Adults of both sexes guarded "creches" of chicks in the salt ponds when aerial predators were present. Survival for all chicks on this colony probably increased as a result of this vigilance.

SITE TENACITY, GROUP ADHERENCE AND MATE FIDELITY IN THE HEERMANN'S GULL (*Larus heermanni*) IN ISLA RASA, BAJA CALIFORNIA

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The phenomena of site tenacity (s.t.), group adherence (g.a.), and mate fidelity (m.f.) have been studied in seabirds, and it has been observed that these phenomena may confer certain advantages and disadvantages to the individuals that present them, according to the prevailing environmental (physical as well as social) situation.

In Isla Rasa, Baja California, we studied these phenomena in the Heermann's Gull in 1983 with a sample of 120 gulls (60 pairs) which had been banded and whose reproductive success for 1982 we knew.

There was less incidence of s.t. and g.a. in nesting sites with worse exposure. Higher m.f. was associated with higher breeding success of the previous season. These differences were not, however, significant. Also, s.t. and g.a. were related in this species. This may be due to a high advantage for nesting together in this species, as well as for migrating, as in some terns, and also to a high stability of the habitat in which they are now nesting.

HABITAT DIFFERENCES, DANGEROUS NEIGHBORS, AND NESTING PERFORMANCE OF COMMON TERNS AND BLACK SKIMMERS

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Common Tern and Black Skimmer colonies on both barrier beach and *Spartina* marsh island sites were studied for three breeding seasons, 1980-1982, along the mid-Atlantic Coast. Clutch sizes, internest distances, and hatching and fledging success were measured and sources of mortality were recorded. Results showed that nest densities of both species were much higher in marshes than on beaches, probably because of the limited amount of wrack available along marsh edges. For terns, clutch sizes and productivity were greater in beach colonies than those in marshes. Gull predation and storm flooding effects varied considerably among colonies and years; the unpredictability of these factors may obscure any intrinsic differences in habitat quality.

NESTING INTERACTIONS BETWEEN GRAY-BACKED TERNS AND SOOTY TERNS IN THE NORTHWESTERN HAWAIIAN ISLANDS

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We studied aspects of the breeding biology of the Gray-backed Tern (*Sterna lunata*) at Tern Island, French Frigate Shoals, in the Northwestern Hawaiian Islands during the 1980, 1981, and 1982 seasons. Nesting habitat preferences and the breeding period of the Gray-backed Tern population overlap with those of its congener, the Sooty Tern (*Sterna fuscata*). The Sooty Tern is far more numerous at Tern Island, with a breeding population of approximately 68,000 pairs compared to 107 Gray-backed Tern nests started in 1980 and 113 started in 1981. The Gray-backed Tern nested in several loose sub-colonies with a mean minimum nest distance of 1.64 meters (S.D.=1.27, n=61). Sooty Terns were found in much denser, highly

synchronized sub-colonies with a mean minimum internest distance of 0.41 meter (S.D.=0.09, nest=56). Anti-predator responses in each species reflect their nest dispersion, Gray-backed Terns relying to a much greater extent on cryptic nests and hiding behavior in the chicks. *Sterna lunata* suffered egg and chick mortality if Sooty Terns moved into their area while they were still incubating, due to the Gray-back adults' and chicks' lack of behavioral mechanisms for high-density nesting.

NEST SPACING, REPRODUCTIVE SUCCESS, AND AGGRESSION IN ARCTIC AND ALEUTIAN TERNS

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Arctic and Aleutian terns are sympatric on their breeding colonies in Kodiak, Alaska, and they nest in mixed-species and in monospecific colonies. The mean-nearest-neighbor distance varies significantly for each species in both the mixed and monospecific colonies. Moreover, the reproductive success of each species varies, depending on the species structure of the colony. This variation in crowding and in productivity may in part be influenced by their agonistic behavior.

ISOLATING MECHANISMS IN SEABIRDS

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Hybridization has been observed to occur between a number of closely related species of seabird, including some which are considered to be classic examples of reproductive isolation. An examination of the external morphology of over 300 sympatric species of seabird, including some observed to hybridize freely, some observed to rarely hybridize, and a number which have never been observed to hybridize revealed the following pattern. Species which had bills and feet which were similar in color tended to hybridize most freely, regardless of differences in other features, such as mantle or primary color, eye or eye-ring pattern, or markings on the head. All sympatric species which were never observed to hybridize had bills and/or feet of different colors. I suggest that the young imprint upon the bill and foot color of their parents, and are likely to mate with any individual of similar size and configuration whose bill and feet resemble those of the parents. This could explain the common occurrence of bright colors in the feet and bills of seabirds, since the generally drab coloration of the plumage in these species is necessary for camouflage during foraging activities.

THE BREEDING MARINE BIRDS OF ALIJOS ROCKS, MEXICO

Pitman, Robert L., Section of Ornithology, Natural History Museum of Los Angeles County, 900 Exposition Blvd., Los Angeles, CA 90007

Alijos Rocks (24°57'N 115°45'W) lie 185 nm off the west coast of southern Baja California. This no-man's-land consists of three rocky pinnacles with no plants, no soil, no landing sites, and no more than ½ acre of total top surface area. I have surveyed these desolate stacks from passing research vessels five times since 1974 with the following results: Masked Booby (est. 100) and Red-billed Tropicbird (est. 14) are resident and have their northernmost colonies in the eastern Pacific at Alijos. Sooty Terns (est. 200) occur in the area and roost on the rocks only during the summer and presumably breed. Magnificent Frigatebirds are irregularly present in small numbers, and their nesting status is unclear. In addition, unidentified

all-dark storm-petrels (probably Leach's) have been seen on two occasions fluttering about the rocks during broad daylight and very likely nest also.

Of particular interest, Laysan Albatross (est. 15-20) are now present at Alijos every winter for the duration of their nesting season. Birds were seen courting on the water in January and April 1983 and were attempting, apparently without success, to land on the rocks. Breeding seems imminent, and signs of colonizing Laysan Albatross should be looked for elsewhere in the North Pacific.

COLONY-SITE SELECTION BY PELAGIC CORMORANTS (*Phalacrocorax pelagicus*) IN BARKLEY SOUND, BRITISH COLUMBIA

Carter, Harry R., Keith A. Hobson, and Spencer G. Sealy. Dept. Zoology, Univ. Manitoba, Winnipeg, MB R3T 2N2, Canada (Present address of Carter: Point Reyes Bird Observatory, 4990 Shoreline Hwy., Stinson Beach, CA 94970)

We documented colony sites used by Pelagic Cormorants (*Phalacrocorax pelagicus*) in Barkley Sound, British Columbia, from 1979 through 1982. This information supplements earlier records of colony-site use dating back to 1947, thus permitting long-term trends in site use and colony size to be identified. About 72% of the 29 colony sites we examined were in caves while the rest were located on exposed cliffs. Cave sites predominated because caves were locally abundant while cliff faces were in short supply. Most sites were not used each year. We suggest that individuals in some localities changed sites between years and, in some cases, within years. Most colonies in Barkley Sound contained fewer than 30 nests, whereas colonies containing up to several thousands of breeding pairs have been recorded elsewhere. Small colonies apparently resulted from the presence of few suitable nest sites in colony sites. We make suggestions for censusing colonies of Pelagic Cormorants in light of the different habitats in which the colonies occur and the apparently dynamic use of the colony sites within and between years.

INLAND MARBLED MURRELETS

Carter, Harry R., and Spencer G. Sealy. Point Reyes Bird Observatory, 4990 Shoreline Hwy., Stinson Beach, CA 94970; Dept. Zoology, Univ. Manitoba, Winnipeg, MB R3T 2N2, Canada

The breeding range of the Marbled Murrelet in North America has been determined largely through discoveries of a few nests, collections of birds with developing ova, sightings of birds holding fish destined for nestlings, and observations of birds often of undetermined status in coastal waters during presumed breeding seasons. Limited data are available on specific localities where murrelets have been recorded inland. Such information can assist in finding more nests and permitting management decisions with regard to recent concern for nesting habitat destruction in this species. We collated 140 inland records of murrelets from Alaska to California and summarized information on specific inland areas and their use by murrelets. To date, 9 nests and 25 grounded juveniles have been recorded. Marbled Murrelets do not normally occur more than 80 km inland (contrary to previous estimates of 100+ miles) and most records are from within 20 km of salt water. Murrelets occur inland in winter, feed in freshwater lakes throughout the year, and appear to move diurnally to and from inland localities in certain parts of their range. The adaptive significance of these hitherto unrecognized aspects of this species' use of inland habitat remains speculative.

VAGRANCY IN AUKLETS

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Vagrancy is rare in the *Aethia* auklets. There is one confirmed record of the Least Auklet (*Aethia pusilla*), three of the Whiskered Auklet (*A. pygmaea*), and five or six of the Crested Auklet (*A. cristatella*), including one from the Atlantic Ocean. Most of these occurrences were in summer and involved adults. Sizes of the source populations of these auklets are examined and compared to the Parakeet Auklet (*Cyclorrhynchus psittacula*), another North Pacific auklet which wanders more frequently, but in winter. These occurrences or lack of them are discussed in light of the known biology of these auklet species.

A RECONNAISSANCE OF BREEDING MARINE BIRDS IN THE EAST-CENTRAL ALEUTIAN ISLANDS: KASATOCHI TO THE ISLANDS OF FOUR MOUNTAINS

Bailey, Edgar P., and John L. Trapp. U.S. Fish & Wildlife Service, 202 Pioneer Ave., Homer, AK 99603; U.S. Fish & Wildlife Service, 1011 E. Tudor Rd., Anchorage, AK 99503

Twenty-one named islands spanning about 400 km were surveyed between 2 June and 22 July 1982. Foxes were released on all but eight small islands in the early 1900's, and they have disappeared from only two. At least 21 species and 735,000 diurnal seabirds nest in the survey area. Approximately 80% of the diurnal seabirds occur on rugged Chagulak, where Aleutian Canada Geese also nest. This island has an estimated 500,000 Northern Fulmars plus enormous numbers of Fork-tailed and Leach's storm-petrels and Cassin's Auklets. The fulmar population is probably the largest on any single island in Alaska; far more Cassin's Auklets nest on Chagulak than elsewhere in the Aleutians. Over 30,000 seabirds nest on Koniuji, Kagamil, and Kasatochi islands; fewer than 5,000 pairs breed on each of the remaining islands in the survey area. Thousands of four species of nocturnals nest on Koniuji Island, the second largest overall concentration of birds in the area. The largest of seven colonies of Ancient Murrelets is at Koniuji. Crested, Parakeet, and Least auklets are most numerous on Kasatochi, despite the presence of foxes. Fork-tailed Storm-Petrels nest on 15 islands and outnumber all other species. Leach's Storm-Petrels appeared to be the next most abundant species. Whiskered Auklets nest in scattered pairs or small colonies on nearly all islands. Kittiwakes, murres, and gulls apparently experienced widespread nesting failures in 1982, and numbers may have dropped sharply in the past 10 years.

COASTAL MIGRATION OF WATERBIRDS AT YAKUTAT, SOUTHEAST ALASKA

Petersen, Margaret R. Alaska Wildlife Research Project - Migratory Birds, Denver Wildlife Research Center, 1011 E. Tudor Rd., Anchorage, AK 99503

I observed coastal movements and determined rates of diurnal migration for 31 species of waterbirds during spring and fall migration at a coastal location on the Yakutat Forelands, Southeastern Alaska, in 1980. Observations consisted of 320 counts in spring and 470 counts in fall for 15 minutes each during daylight hours. Data on bird movements during peak migration periods and weather were analyzed by evaluating weather systems. In spring, waterfowl generally migrated with moderate to very strong tailwinds associated with conditions on east sides of lows, or weak headwinds associated with west sides of lows. In spring, cranes migrated during days with rising barometric pressure, warm temperatures, following winds, and good visibility. In spring, shorebirds migrated during days with light headwinds, high ceilings,

warm temperatures, clear skies, and high barometric pressure. In fall, swans, Snow Geese, scoters, and mergansers migrated on the east side of lows, and puddle ducks migrated past Yakutat in almost any weather. In fall, cranes migrated in clearing skies, increasing temperatures, light winds, and falling barometric pressure; they used thermals to increase altitude. The data suggest that Laridae may migrate in all weather conditions, some contrary to others. Weather conditions during gull migration varied considerably, although no migration was observed when lows with strong headwinds passed the Yakutat area.

PREDATION ON JELLYFISH AND THEIR SYMBIONTS BY SEABIRDS

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Jellyfish are a significant source of food for five species of Bering Sea birds, including Northern Fulmars, Short-tailed Shearwaters, Fork-tailed Storm-Petrels, Black-legged and Red-legged kittiwakes. An important food of Northern Fulmars was the scyphomedusan *Chrysaora*. Its symbionic amphipods and undigested prey also contributed to fulmar diets, as indicated by the unusually high prey diversity of medusa-feeding birds.

A POPULATION MODEL OF THE ENDANGERED HAWAIIAN DARK-RUMPED PETREL

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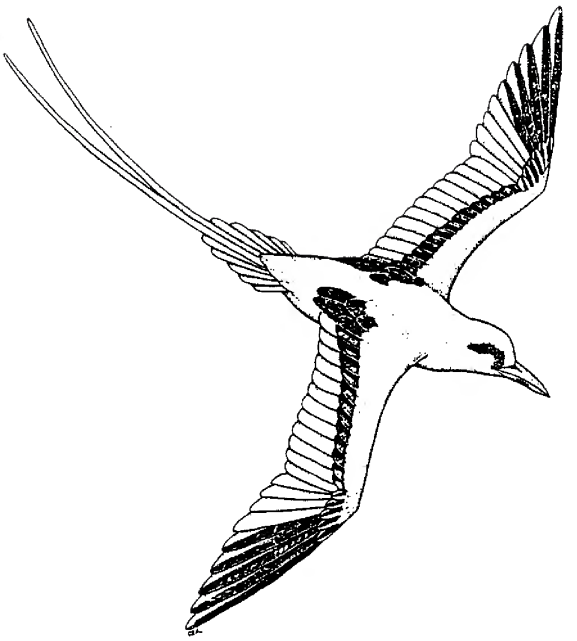
A Leslie matrix model was used to evaluate the vulnerability of the endangered Hawaiian Dark-rumped Petrel (*Pterodroma phaeopygia sandwichensis*) population to the factors currently threatening its survival. These factors include predation by introduced mammalian predators, fledgling mortality due to light-induced groundings in urban areas, and fluctuations in reproductive success. Input parameters for the model were derived from a three-year study of the bird's breeding biology and estimates from the literature. The simulations demonstrate that the population is sensitive to small reductions in adult survival and reproductive success. Consistent predation similar to that experienced by the population in 1979 could drive it to extinction in 20 to 30 years. The survival of these K-selected birds depends upon their continued protection from predators and other unnatural sources of mortality. The model has been helpful in estimating the current structure and dynamics of the population and in determining management priorities for the species.

DIVING RHYTHMS AND DIURNAL ROOSTING TIMES IN ADULT AND IMMATURE PELAGIC CORMORANTS

Hobson, Keith A., and Spencer G. Sealy. Dept. Zool., Univ. Manitoba, Winnipeg, Manitoba R3T 2N2, Canada

During July and August 1982 and 1983, we measured dive time, pause time, and capture rate of foraging Pelagic Cormorants in Barkley Sound, British Columbia. Birds preferred to forage in water 2-5 m deep, and here a dive-to-pause ratio (D/P) of 2.3 was found for adults. Immatures paused longer between dives and showed a D/P ratio of 2.1. The mean capture rate for both adults and immatures was 11%. The duration of diurnal roosting times between foraging bouts was also measured. The ratio of diurnal roosting time to foraging time (R/F) was 3.5 with no significant difference between adults and immatures. Comparisons are made with data reported for other cormorant species and habitat types.



CONSERVATION SECTION

PSG's main objective in the past has been the exchange of scientific information on seabirds in the Pacific ecosystem. That will also remain PSG's chief aim in the near future. Although PSG has been active in the field of conservation, it has never been our forte. The present Conservation Committee plans to change that by focussing the attention of PSG members increasingly on conservation issues involving Pacific seabirds by bringing all conservation issues under one umbrella in a Conservation Section in the PSG Bulletin. PSG members who know of conservation problems in their geographic region should contact the nearest member of their Conservation Committee. The Committee members and their addresses are listed below.

First Meeting of the New PSG Conservation Committee

The first meeting of the new PSG Conservation Committee was held on 7 January 1984 during the 10th annual PSG meeting at Asilomar, California. The following committee members attended: Dan Anderson, Barbara Johnson, Stewart Fefer, Lora Leschner, Palmer Sekora, Art Sowls, Steven Thompson, Enriqueta Velarde, and Audrey Newman. Absent were: George Divoky, Warren King, Ron Naveen, and Roberto Schlatter. Also attending were Judith Hand, PSG Chairman, and Michael Scott, I.C.B.P. representative.

Chairman Vermeer discussed a) an Orange Data Book for Seabirds, b) a pamphlet for investigators, and c) a conservation workshop on waterbirds of North America to be held at a joint CWG-PSG meeting (items listed in the 1983 summer issue of the PSG Bulletin). Scott stated that I.C.B.P. might prepare an Orange Data Book, in which case there would be no need for PSG to pursue the subject. The members agreed that a pamphlet for investigators is an excellent idea and should be followed up. Fefer, Sekora, Thompson, and Velarde volunteered to assist the Chairman in preparing the pamphlet, which is to be published and distributed by PSG. Regarding a joint workshop on conservation of waterbirds, CWG and PSG are planning joint meetings in San Francisco in 1985 and in Washington, D.C., in 1987. Perhaps 1985 is too early, but 1987 would be an appropriate time to hold a workshop on the conservation and status of colonial waterbirds in North America.

Two other issues discussed at the committee meeting were: a) PSG Bulletin conservation section. The members agreed that all conservation issues from the regional reports and other sources should be combined in a separate section in the PSG Bulletin to focus more attention on conservation issues. b) Streamlining of conservation issues. Fefer, Johnson, and Newman will outline the steps to be taken to ensure that information on a conservation issue will reach its target in a proper and timely manner.

Non-game Waterbirds Workshop

A workshop on the status and conservation of North American waterbirds and shorebirds is proposed for the 1985 CWG-PSG meeting. The species which would be considered include loons, grebes, tube-noses, pelicans, cormorants, herons, ibises, spoonbills, cranes, rails, and all charadriiform birds. Possible sections would be status and "special problems."

A workshop, in contrast to a formal symposium, would allow a more informal exchange of information in which all participants could join the discussions. The results of the workshop could be published by CWS or PSG as a source of baseline information on the status of North American waterbirds. Authors would be given about six months to integrate the information gained from the workshop into draft manuscripts. The working report would be similar to the results of the ICBP Cambridge Workshop, which are to be published in the ICBP Bulletin this year and which will provide the first overall baseline information on the status of the World's seabirds. Those interested in participating in such a workshop should contact Committee Chairman Vermeer.

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Besides papers abstracted in the current literature supplement of *The Auk*, the following papers were translated. Copies are available at cost of photocopying (mention that you're a PSG member) from Josselyn van Tyne Library, Bird Division, Museum of Zoology, Univ. Michigan, Ann Arbor, MI 48109.

Kishchinskii, A. A. 1980. [Birds of the Koryak Highlands: Ross's Gull *Rhodostethia rosea*.] Nauka, Moscow, pp. 178-179.

Korzun, L. P. 1981. [On the phylogenetic relations between loons (Gaviiformes) and grebes (Podicipediformes).] Zool. Zhur. 60:1523-1532. E. Strauch, trans.

Krechmar, A. V., A. V. Andreev, and A. Ya. Kondrat'ev. 1978. [Ecology and distribution of birds in the NE USSR: Ross's Gull.] Nauka, Moscow, p. 66.

Onno, S. 1969. [How frequently do Common Gulls lose bands?] Communications of Baltic Committee on the Study of Bird Migration 6:118-124.

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Yudin, K. A. 1978. [The systematic position of *Peltohyas australis* Gould and the natural boundary between the Limicolae and Laro-Limicolae (Charadriiformes, Aves),] pp. 3-34, *In*: [The systematics, morphology and biology of birds,] I. A. Neifeldt, ed., Nauka, Leningrad. E. Strauch, trans.

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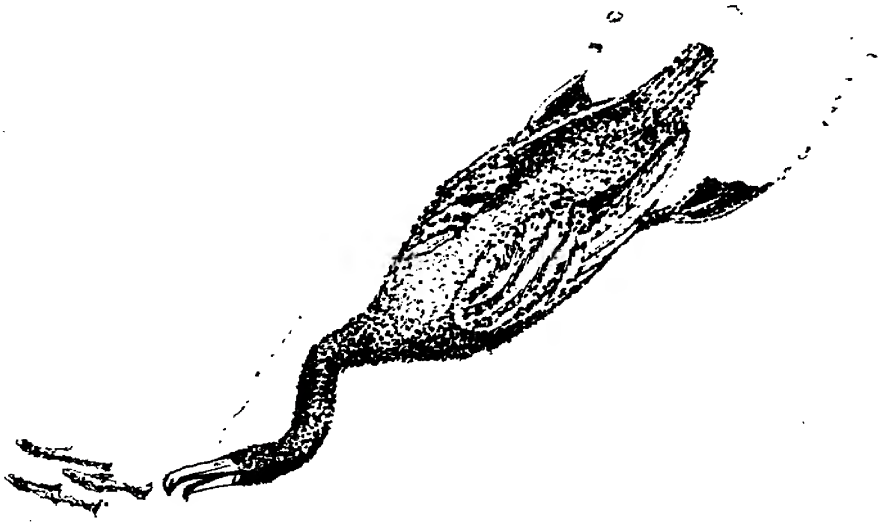
Douglas Siegel-Causey



WASHINGTON REPORT

During the first half of 1983, numerous governmental activities from the passage of legislation to the signing of conventions affect seabird/wader conservation efforts. Congressional actions are more visible and well published than nonlegislative activities. The first, and more extensive, section of this report covers legislative actions. The second section covers some nonlegislative actions that have come to my attention.

LEGISLATIVE ACTIONS

With the 98th Congress well into its first session, the players and issues are well defined. Members of the key committees for seabird/wader conservation issues are as important to know as the issues. If you have a Representative on a key committee, you should contact him/her and express your interest in and reasons for seabird/wader conservation. Educating your Representative as to the importance of this issue is a slow process. It is never too soon to start. You can write a letter of general concern or tie your concern into one of the numerous issues currently before Congress that will affect seabirds and/or waders.

The principal committees and respective subcommittees for seabird/wader conservation issues in the Senate are: Commerce, Science and Transportation Subcommittee on Merchant Marine; Environment and Public Works Subcommittee on Environmental Pollution; and Energy and Natural Resources Subcommittee on Public Lands and Reserved Water. In the House the principal committees and subcommittees are: Merchant Marine and Fisheries Subcommittees on Oceanography and Fisheries and Wildlife Conservation and the Environment; Interior and Insular Affairs Subcommittee on Public Lands and National Parks; and Public Works and Transportation Subcommittee on Water Resources. A list of the key environmental committee and subcommittee members printed in the April 1983 Sierra Club *National News Report* may be obtained free from the Sierra Club Information Services, 530 Bush Street, San Francisco, CA 94108.

Several bills moving through Congress have a direct bearing on seabird/wader conservation. Those bills are reauthorization of the Marine Protection, Research and Sanctuaries Act (Titles I and III), Ocean and Coastal Resources Management and Development Act, Clean Water Act, and Mono Basin National Forest Scenic Area. A brief description of these bills, the issues, and their present status follows.

Reauthorization of the Marine Protection, Research and Sanctuaries Act. H.R. 2062 and S. 1102 seek to reauthorize for two years the federal program for marine sanctuaries. The sanctuaries portion of the original Act passed in 1972 (Title III) allows the President to designate for marine sanctuary status areas of "distinctive recreational, ecological or aesthetic value." Six sites have been designated so far. One is the Channel Island Sanctuary off Santa Barbara in southern California. This sanctuary protects extensive kelp bed communities and abounds with sealife: seals, sea lions, and more than 80 species of resident migratory birds.

The major issue is not whether this program should be reauthorized but who should designate sanctuaries—the U.S. Department of Commerce, which now has the authority, or the Congress. Other issues are the role of commercial fishing interests in the designation process and exemption for the oil and gas industry from the program regulations.

The House has passed H.R. 2062, which originated in the House Merchant Marine and Fisheries Committee and has the support of environmental groups. The Senate Commerce, Science and Transportation Committee has not acted on the bill.

The Ocean Dumping Amendments Act. H.R. 1761 (no Senate bill) is a one-year reauthorization of Title I of the 1972 Marine Protection, Research and Sanctuaries Act. The bill seeks to alter the way ocean dumpsites are designated and managed. Under Environmental Protection Agency (EPA) rules and previous Ocean Dumping Act amendments, 31 December 1981 was to be the date for phasing out the sea disposal of wastes which would "unreasonably degrade" the environment. H.R. 1761 requires the EPA to designate permanent ocean dumping sites for all wastes from dredge spoils to industrial discharges to sewage sludge after completing environmental studies. EPA is to monitor the effects of waste disposal on the site and surrounding waters once dumping has begun. Little is known about the effect of dumping practices on the life and health of seabirds and waders.

The issues to be resolved are: court ordered designation of new and unstudied ocean dumping sites over the objection of EPA, annual reporting by EPA and the Corps of Engineers, and reliability of ocean dumping and sampling data.

H.R. 1761 was passed by the House Merchant Marine and Fisheries Committee and referred to the House Public Works and Transportation Committee, which also has jurisdiction. Since the Senate has not considered this issue, it is unlikely that this bill will pass this session.

Ocean and Coastal Resources Management and Development Act. H.R. 5 and S. 800 would change the way that major federal coastal programs are funded and administered. These bills would establish for the first time a fund from offshore oil and gas leasing revenues and would grant as much as $400 million annually to coastal states for administration of coastal programs.

Although both the House and the Senate bills would give the states considerably more money than they have had in the past and considerably more discretion in spending the money, Congress must address specific issues such as adequate oversight of state programs, adequate public participation, and eligible uses of the money (e.g., enhancement and management of living marine and natural resources, which would benefit seabirds and waders, and/or "infrastructure," such as airports and roads, as necessary for orderly development of coastal resources.

These bills are expected to come to the floor of the House and Senate in late July.

Clean Water Act. One of the most controversial issues before Congress which has a major effect on wading birds is the reauthorization of the Clean Water Act, the only comprehensive federal law regulating activities that affect the nation's valuable and diminishing wetland resources. Section 404 of that Act governs the discharge of dredge and fill materials into the waters of the United States, including wetlands. All dredge and fill activities in wetland areas must meet environmental protection requirements.

The primary issues before Congress are developing procedures for the transfer of the permitting program to the States and for simplifying the permit process.

The Clean Water Act amendments are currently waiting consideration by the Senate Committee on Environment and Public Works and the House Public Works and Transportation Subcommittee on Water Resources.

Mono Basin National Forest Scenic Area. H.R. 1341/S. 1331. Mono Lake is a unique ecosystem in the eastern Sierra Mountains of California. The abundance of brine shrimp in the lake serve as a food source for a number of species, especially birds. The area is a major congregation point for migratory birds as well as a principal breeding ground. Twenty percent of the world's population of California Gulls breed at this Lake. Seventy-nine species of water-birds, including Eared Grebe, Wilson Phalarope, and Snowy Plover, have been recorded.

At issue is whether the City of Los Angeles should continue to take water from the Lake in such quantities that endanger the survival of its unique ecosystem. H.R. 1341 and S. 1331 seek to establish a more protective management system and call for a five-year National Academy of Sciences study of the effect of declining water levels on wildlife, including the waterbirds. Water rights are not addressed.

H.R. 1341 has passed the House and been referred to the Senate Committee on Energy and Natural Resources, which is expected to take action this session.

NONLEGISLATIVE ACTIONS

Not all the action has been in the legislative sphere. Several recent events in the non-legislative arena that affect the world of seabirds and waders are:

-Seventeen nations meeting in Cartagena, Colombia, approved the first major Pan-Caribbean environmental treaty and protocol to combat pollution and protect the Caribbean environment.

-Establishment of the Convention on the Conservation of Antarctic Living Resources requiring that fishing quotas be established only after the effects on dependent species have been taken into account and special consideration of effects on endangered species.

-Fourth conference on the Parties of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) moved the Dalmatian Pelican and the Slender-billed Curlew from Appendix II to I, the highest level of protection. The Tule Goose was removed from the list. The White-headed Duck, the Demoiselle Crane, and all species in the flamingo family (Phoenicopteridae) were added to Appendix II.

-On 30 December 1982 the Fish and Wildlife Service published in the *Federal Register* (vol. 47, no. 251, p. 58454) a list of plants and wildlife being considered for endangered or threatened status. Seabirds and waders fell into two categories: Category I, where substantial evidence is on hand to support listing of species as Endangered or Threatened, and Category II, where substantial data are not available. Anyone with information on birds in either of these categories should contact John L. Spinks, Jr., Chief, Office of Endangered Species, U.S. Fish and Wildlife Service, Washington, D.C. 20240.

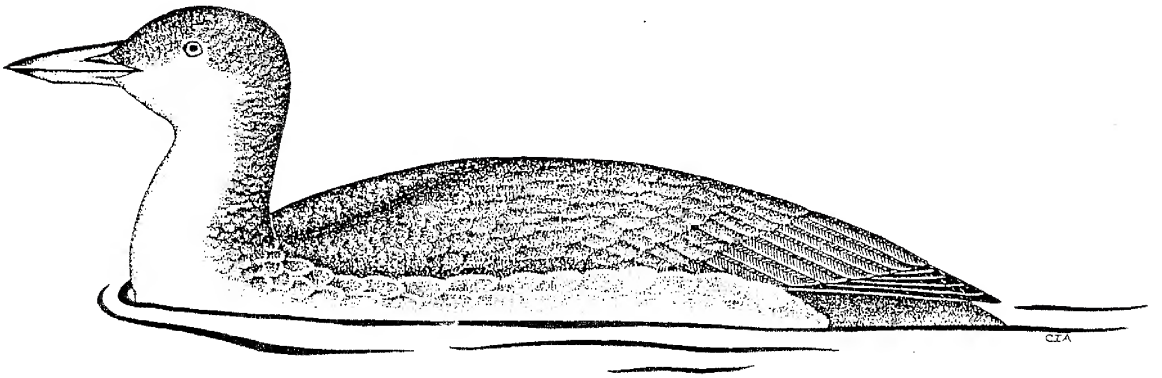
Category I: Wood Stork (*Mycteria americana*) and Marianas Gallinule (*Gallinula chloropus guami*).

Category II: Reddish Egret (*Egretta rufescens*), White-faced Ibis (*Plegadis chihi*), Mangrove Clapper Rail (*Rallus longirostris insularum*), Guam Rail (*Rallus owstoni*), California Black Rail (*Laterallus jamaicensis coturniculus*), Western Snowy Plover (*Charadrius alexandrinus nivosus*), Southeastern Snowy Plover (*Charadrius alexandrinus tenuirostris*), Piping Plover (*Charadrius melodus*), Mountain Plover (*Charadrius montanus*), Long-billed Curlew (*Numenius americanus*), Roseate Tern (*Sterna dougallii dougallii*), and Interior Least Tern (*Sterna antillarum athalassos*).

-For the second time in the last year, the U.S. Corps of Engineers issued new rules governing wetland protection. Last July, the Corps issued 25 automatic "nationwide permits" that exempt from individual review certain discharges into wetlands. Recently, the Corps proposed to open more of the nation's wetlands to unrestricted development and reduced the public comment period on individual projects from 30 days to 15 days.

When people think of the legislative/regulatory process they usually focus on the "substantive" issues and neglect "budget" issues. In this day and age of fiscal constraint, people who are concerned about an issue and want to influence the decision-making process must become familiar with the authorization and appropriation process. Since the process is well under way for the fiscal year 1984, which begins in October 1983, the budget process and budget issues that affect seabirds and waders will be covered in another article at another time.

Daphne Gemmill



U.S. FISH & WILDLIFE SERVICE REGIONAL MARINE BIRD POLICY

I. *Biological and Historical Perspective*

Marine birds have been one of the more neglected natural resources of the world. Although knowledge of these birds is significantly less than for most other avifauna, hundreds of millions are known to exist in and depend on large geographical areas in the Pacific Basin. They are an international resource, and their protection and management depends to a great extent on international treaties and cooperation. The responsibilities and authorities of the U.S. Fish and Wildlife Service for protection and management of marine birds in the Pacific Basin are based on Migratory Bird treaties with Canada, Mexico, Japan, and the Soviet Union and several pertinent acts of Congress. These responsibilities pertain to all lands, not just refuge lands; and to all divisions and programs of the Service, not just Refuge Management.

Marine birds have distinctive characteristics which make management and protection difficult. Most are long-lived and have deferred maturity and low reproductive rates, which indicates that extended periods would be necessary for recovery from severe population reductions. They are highly vulnerable to catastrophic losses, since entire populations are often concentrated on islands during the crucial breeding season. Large marine bird concentrations also occur in areas heavily used by humans such as the continental shelf and fishing grounds and are thereby vulnerable to severe impacts. The most important threats to these concentrations of marine birds are oceanic pollution, especially from extraction and transportation of petroleum and other minerals, human disturbance, introduced predators and human competition for the fishery resource.

II. *Policy*

It is the policy of the U.S. Fish and Wildlife Service within Region 1 to:

1. Implement to the fullest extent possible those Migratory Bird Treaty provisions dealing specifically with marine birds, especially those within the recent Japanese and Soviet Union treaties.

2. Maintain all marine birds occurring on National Wildlife Refuge lands and waters at not less than current population levels, in their natural diversity and on native habitat throughout their range.

3. Utilize all available programs and divisions of the Fish and Wildlife Service to influence the maintenance of the population and habitat conditions in No. 2 above on all non-Service lands, especially other Federally owned lands.

4. Recognize that most marine bird colonies, roosts and loafing sites are important to their survival and work toward the establishment and active protection of these habitats and their adjacent waters as marine bird sanctuaries by private, local, state, or Federal interests.

5. Encourage formulation of comprehensive land management plans, effective regulation of offshore oil and mineral development and stringent tanker safety laws - to provide adequate protection for marine birds and their habitats in areas which may be developed.

6. Encourage appropriate research and surveys on marine birds and their ecosystems, especially work related to long-term monitoring of populations and habitats and identifying species nearing threatened status.

7. Remove all introduced predators from marine bird colonies on all National Wildlife Refuges and encourage their removal from all other colonies.

III. *National Wildlife Refuge Lands*

The following is a listing of National Wildlife Refuges within Region 1 established primarily for marine bird uses or having significant marine bird use in addition to its primary reason for refuge designation.

Washington: Copalis National Wildlife Refuge
Quillayute Needles National Wildlife Refuge
Flattery Rocks National Wildlife Refuge
San Juan Islands National Wildlife Refuge
Willapa National Wildlife Refuge
Protection Island National Wildlife Refuge

Oregon: Oregon Islands National Wildlife Refuge
Three Arch Rocks National Wildlife Refuge
Cape Meares National Wildlife Refuge

California: Humboldt Bay National Wildlife Refuge
San Francisco Bay National Wildlife Refuge
Farallon National Wildlife Refuge

Hawaii: Hawaiian Islands National Wildlife Refuge
Kilauea Point Administrative Site

American Samoa: Rose Atoll National Wildlife Refuge

U.S. Possessions in the Pacific: Johnston Atoll National Wildlife Refuge
Baker Island National Wildlife Refuge
Howland Island National Wildlife Refuge
Jarvis Island National Wildlife Refuge

Richard J. Myshak, Regional Director
U.S. Fish & Wildlife Service
Region 1
Portland, OR

NETS BANNED TO PROTECT SEABIRDS

Following the loss of several thousand seabirds in gill nets and trammel nets, Department of Fish and Game Director Don Carper on August 15 took emergency action to close specified nearshore waters along the central California coastline to commercial fishing with entangling nets.

Carper said the closure will remain in effect until October 16 or until there is evidence that further seabird mortalities would not result from an earlier lifting of the emergency action.

Closed were coastal waters in less than 10 fathoms between Point Reyes, Marin County, and Pigeon Point, San Mateo County (except for waters outside of a line between the Duxbury Point buoy and Point Bonita buoy and a line extending from the Point Bonita buoy to a point in 15 fathoms of water due west magnetic from Mussel Rock, just north of Pacifica); waters less than 15 fathoms from Mussel Rock south to Miramontes Point, San Mateo County, and waters less than 10 fathoms in depth from Miramontes Point south to Pigeon Point.

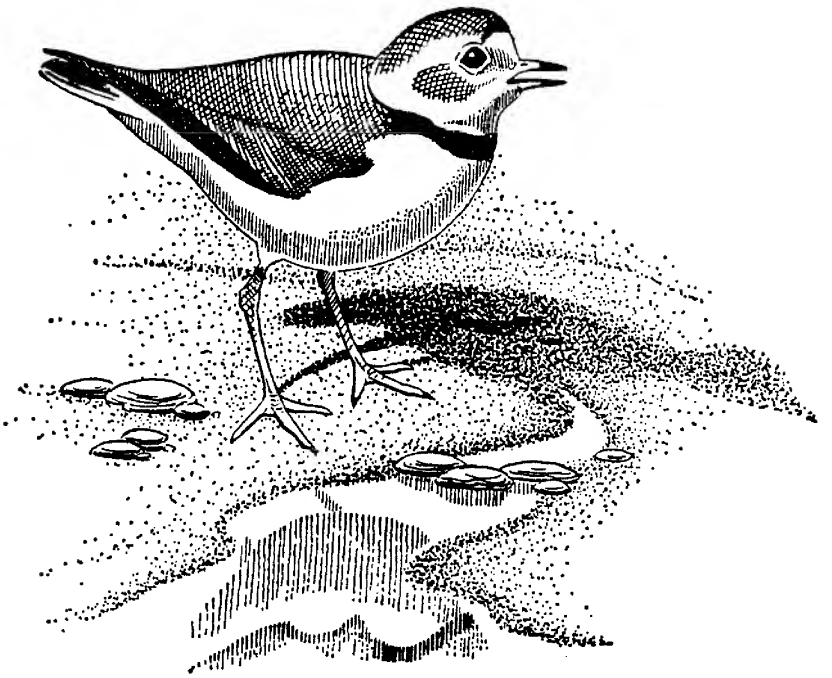
These areas, said Carper, include those where DFG studies and public testimony indicate the greatest seabird mortality is occurring.

Following a public hearing June 1, then acting director E. C. Fullerton decided not to close the area to fishing because of a lack of evidence from testimony or DFG investigations showing irreparable injury or threat to the lives of local seabirds. Such evidence is required by law before emergency action may be taken.

On August 5, the DFG held its second public hearing on the subject. Testifying at this hearing were representatives of conservation groups and scientific organizations as well as representatives of sport and commercial fishing industries, local and state governments.

Carper said the DFG is working to complete studies begun in April to obtain information that can be used to develop more permanent solutions to what has become "a chronic seasonal problem of increasing seabird populations interacting with an intensified gill net and trammel net fishery."

California Department of Fish and Game
20 August 1983



WORLD WILDLIFE FUND PIPING PLOVER PROJECT

The Piping Plover's existence has been one of the most precarious of any of the shorebirds that make their winter home in Mexico and the Caribbean. In the early 1900's the Piping Plover population was nearly extirpated by hunting pressure. Millinery of the day often included its feathers, and in some cases the entire bird found its ultimate resting place atop the head of one of America's fashionable elite!

Federal legislation eventually brought protection to the Piping Plover, and by 1925 the species had a partial recovery. Unfortunately, the population has plunged since World War II due to the pressure of recreational beach development. It has been recommended for inclusion in the U.S. Fish and Wildlife Service's Endangered Species List. Estimates of the current population range from only 2,500 to 6,000.

Help may be on the way, however. Dr. Lewis Oring, University of North Dakota, will investigate the factors linked to the decline in Piping Plover populations. The results of his study will form the basis of a comprehensive conservation and management plan which ideally will ensure that this species will continue to make its summer home along the sandy beaches of North America.

FIELD REPORT

A Short-tailed Albatross Record for Alaska in 1981

On 7 June 1981 I observed and photographed a sub-adult Short-tailed Albatross (*Diomedea albatrus*) south of Amchitka Pass, central Aleutian Islands, Alaska, at 50° 46.2′ N., 179°31.0′ E. I sighted the bird at 16:00 from the flying bridge of the Japanese Fisheries Agency patrol vessel KYO MARU No. 1, while serving as a marine mammal observer in the United States-Japan Cooperative Research Program on Dall's porpoise. We were cruising at about 14 knots when the bird approached the stern of the ship and joined a large flock of seabirds that included Northern Fulmars (*Fulmarus glacialis*), Black-legged Kittiwakes (*Rissa tridactyla*), Fork-tailed Storm-Petrels (*Oceanodroma furcata*), 10 Laysan Albatrosses (*Diomedea immutabilis*), and a Black-footed Albatross (*Diomedea nigripes*). The Short-tailed Albatross followed the ship for nearly 45 minutes, approaching as close as 40 meters before departing. Sea conditions were mild (Beaufort 2, surface water temperature 6.8°C) and visibility was excellent. I studied the bird with 10X50 binoculars and compared it with the other albatrosses. Douglas Bertran, another U.S. observer, also saw the bird. Duplicate photographic slides of the bird are on file at the University of Alaska Museum at Fairbanks and the San Diego Natural History Museum.

The Short-tailed Albatross was decidedly larger than the other albatrosses. Its bill was large and pink, with a pale blue tip. The top, back, and sides of the head and the chin, throat, and neck were dark brown. The forehead and region around the eyes were white. The dark of the neck contrasted sharply with the clear white of the breast and belly. The lower belly and under-tail coverts were dirty brown. The undersides of the wings were mostly brown, with some white in the under-wing coverts. The dorsal surface of the bird was mostly brown, except for a light spot on each wing near the body and a white tail with a black terminal band.

The sequence of plumages of the Short-tailed Albatross has not been described. Like several southern albatrosses, young Short-tailed Albatrosses apparently spend several years at sea and wear several plumages before returning to the colony to breed. In addition, plumage patterns vary considerably among birds of the same age. More than ten years will pass before the birds attain the definitive white adult plumage, and before this the birds start breeding (Hasegawa, pers. comm.). A banded four-year-old bird photographed at Torishima (Hasegawa 1978) appears slightly more advanced in plumage than the bird I saw. Photographs of Short-tailed Albatrosses in similar plumage were published by Yanagisawa (1973).

This species was formerly abundant around the Aleutian Islands (Gabrielson and Lincoln 1959, Murie 1959, Yesner 1976). The tragic destruction of these magnificent birds by feather hunters was recounted by Austin (1949), who feared the species extinct. Sanger (1972) reviewed pelagic sightings through 1970; Hasegawa and DeGange (1982) summarized more recent reports, including this sighting.

The world population of the Short-tailed Albatross may now be as high as 250 (Hasegawa 1982). As the population expands, observers are more likely to encounter these birds at sea. Lack of information on intermediate plumages and possible confusion with other species (Gochfeld and Tudor 1975) have led to several erroneous reports of the species (Roberson 1980). Even well-photographed birds of other species (Helms 1980) have been misidentified as Short-tailed Albatrosses (G. McCaskie, Cal. Bird Records Comm., pers. comm.). Observers and reviewers are urged to exercise extreme caution and to provide as many details as possible before reporting sightings of this endangered species.

Acknowledgments:

I am grateful to Larry Tsunoda and Linda Jones of the United States National Marine Mammal Laboratory for the opportunity to participate in the research program on Dall's porpoise. Drs. Hiroshi Hasegawa and Haruo Ogi provided pertinent Japanese literature. Hiroshi Hasegawa and Lance Tickell examined the photographs and concurred with my identification. Anthony DeGange, Dan Gibson, Gerald Sanger, and David Ainley reviewed early drafts of this manuscript and provided many useful comments. I extend my thanks to all.

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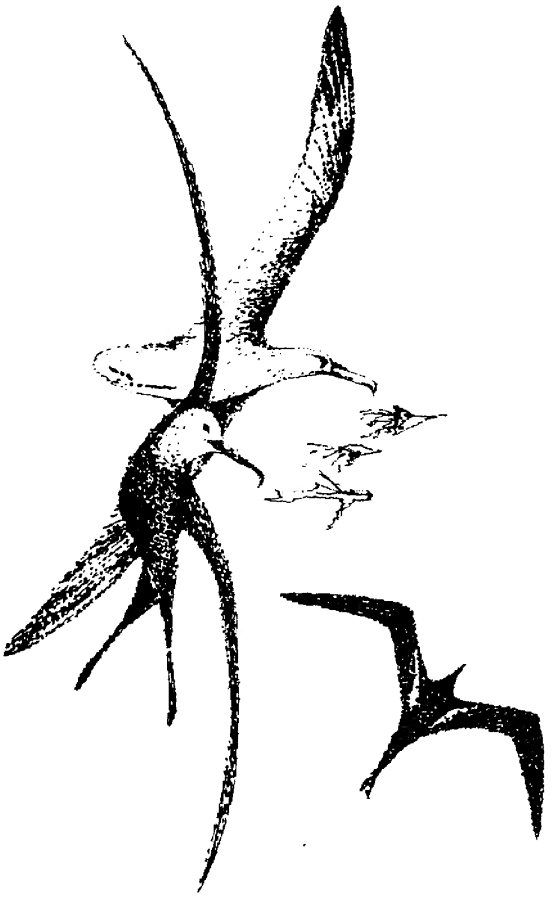


BOOK REVIEWS

Proceedings of the Symposium on Birds of the Sea and Shore. 1981. J. Cooper, ed. 474 pp. African Seabird Group, Cape Town, South Africa. (Symposium held at the University of Cape Town, 19-21 November 1979). Available from: Treasurer, African Seabird Group, FitzPatrick Institute, Univ. Cape Town, Rondebosch 7700, South Africa.

These *Proceedings* (see PSG Bulletin, Summer 1983, 10(1):29) provide an excellent review of current work on marine birds in a part of the world that, quite likely, few members of PSG are familiar with. Included are 26 complete papers plus abstracts of an additional 11 papers that were presented at the symposium. The proceedings are highlighted by four papers of major general significance (see below), but the geographic coverage of the papers focuses on coastal areas of South Africa (16, 43% of the papers) and adjacent oceans (11 papers, 30%). Four papers on European studies and three others from North America round out the geographic coverage.

A wide variety of topics is covered, with 26 (70%) on typical seabirds, and the remaining 11 (30%) on shorebirds. Feeding ecology is by far the most intensively covered general topic (ten papers, six on seabirds and four on shorebirds). Quite surprisingly, however, none of these is related to breeding biology. Only six (16%) deal specifically with some aspect of breeding biology or early life history. These statistics may seem dry, but they provide a perspective for comparison with recent work in the eastern North Pacific, where investigators' energies have remained somewhat focused on studies conducted from land.

More specifically, topics and bird species covered include seabird-fisheries interactions, feeding behavior of White-fronted Sand Plovers and Sanderlings, procellariiforms as squid predators, feeding ecology of sheathbills, storm-petrels, prions, skuas, oystercatchers and Curlew Sandpipers; pelagic distribution and censusing problems, seabird fossils, giant petrels, Jackass and Gentoo penguins, Terek Sandpipers, Common Terns in New York, Brown Pelicans along the Atlantic seaboard of North America, and, in a fascinating paper by J. Mendelsohn, movements of *Pachyptila* spp. prions in relation to low-pressure weather systems.

With 38 papers, it is difficult to mention any single one more than fleetingly and stay within the scope of a normal book review. Four papers, however, have broad enough implications to deserve more than passing commentary: Robert Furness's treatment of seabird and seal foods in relationship to commercial fisheries; W. R. P. Bourne's thoughtful, if somewhat rambling and philosophical, discussion of pelagic distribution; A. J. Prater's excellent review of primary molt patterns in Palearctic shorebirds; and Joanna Burger's thought-provoking analysis of the process of fledging in seabirds.

Furness argues convincingly that commercial fisheries have effected changes in marine ecosystems as indicated by population changes in marine birds and mammals in several areas of the world ocean. Increased whale catches in the Southern Ocean have resulted in increased population sizes and decreased age of breeding in crabeater and southern fur seals and in krill-eating birds (Chinstrap and Adelie penguins). The anchoveta fishery off the Pacific coast of South America (along with periodic El Niño events) has resulted in the reduction of populations of guano birds to sustained levels that are much lower than before the fishery. Increased landings in the South African pilchard fishery have paralleled decreasing population sizes in Cape Gannets, Cape Cormorants, and Jackass Penguins. Conversely, population levels of 13 species of seabirds in the North Sea have been enhanced by fisheries over the past century.

Overfishing of relatively large species such as cod and plaice at first created more food for birds that had competed with the fishes for food. After stocks of these fishes crashed, progressively smaller species were similarly overfished over the years, one after the other, until at present, species such as sand lance and sprats are being fished, which threatens the birds' primary food source.

W. R. P. Bourne, long a guru of the broad view of seabird biology, relates seabird distribution to oceanography, meteorology, breeding biology, the structure of seabird communities (But why no mention of V. P. Shuntov's (1972) thorough treatment of the subject? *cf.* "Marine birds and the biological structure of the ocean"), and "The Human Factor." Touching on seabird-fisheries interactions under the last subject, Bourne raises ". . . an ethical question whether in a world short of protein we are justified in demanding the limitation of human fisheries for the sake of vast bird populations which few people ever see." A point well taken. The editor of the proceedings apparently allowed Bourne a certain amount of literary license, but Shuntov's important work should at least have been mentioned, and the statement that alcids ". . . frequent comparatively sheltered seas . . ." should have been challenged. I don't know about the North Sea, but if Bourne were to sail the waters of the Aleutian Islands and the Bering Sea he might reconsider this odd notion.

A. J. Prater's thorough review of patterns of primary molt strikes me as the kind of work we need more of. Subtopics include distribution of molting shorebirds in the western palearctic, general molt patterns, sequence, suspended molt, arrested molt, asymmetry, sexual variations in starting and speed of molt, annual and latitudinal variation in timing, duration of adult molt, primary molt of juvenile/first-year birds, and first-summer molt. Prater focuses on constraints on molting as related to feeding conditions, and he makes a well-reasoned plea for international standardization and cooperation in molt studies.

"Ambiguous" is how Joanna Burger views the popular term "fledging;" she uses instead "transition period" to describe what happens in the life history of young seabirds from the time they leave the nest until they are fully independent of their parents. For each of 14 families in four orders, Burger reviews and compares major developmental stages in young birds. (Omitted, however, are the storm-petrels.) Developmental stages described are leaving the nest, vacating the colony, learning to fly, learning to forage, and being left by parents. The sequence of these events and their relative duration vary among different birds.

Although Burger claims that this paper contrasts with one she published in 1980 ("The transition to independence and postfledging parental care in seabirds," pp. 367-447 *in: Behavior of Marine animals, V. 4: Marine Birds*, Plenum Press), it appears merely to summarize ideas mentioned in more detail in the 1980 paper; i.e., the 36-page section subtitled "The transition and post-fledging period in seabird families." As an oral presentation at a symposium this duplication may be acceptable, but as a publication it is redundant. Burger's approach to understanding "fledging," however, is helpful, and I anticipate that these ideas will indeed stimulate discussion and further research on the transition period in seabirds.

Ralph Schreiber's insightful and positive summary of the symposium includes advice that seabird workers anywhere in the world would do well to heed. Here are a few direct quotes:

". . . . We need to acknowledge the BIG PICTURE as we study only small aspects of a species or system, and we need to be aware of the large VARIABILITY inherent in the system.

The need to look at large geographic areas, and the necessity of long term studies became very clear during this symposium . . . . We are kidding ourselves if we think that short term "quick and dirty" studies are biologically valid." (Are you listening, Alaskan Outer Continental Shelf Environmental Assessment Program?).

". . . .The role of HUMAN INTERACTIONS was often explicit . . ." "There is a need for presentation of our scientific results to government policy making bodies so that wise conservation decisions may be adopted." "We must understand [seabirds'] lives at sea, and during the nonbreeding seasons, since that is the basis of their island life." (Agreed to as your main point, Ralph, but isn't the reverse equally true?).

"Serious consideration must be given to collecting data that are truly relevant to valid biological questions." "We must know more about prey density and availability and mere observation of the birds from a distance will not provide answers to most basic questions. Studies are needed on how birds actually feed, and the role of taste and choice investigated." "The need for precise and strict DEFINITION OF TERMINOLOGY AND TECHNIQUES is essential . . . ." " 'At sea' observation methods must be standardized and more attention given to relative numbers than to attempts to arrive at a precise number of individuals." ". . . .Marine ornithologists must avail themselves of all ships of opportunity and find means to show oceanographers the value of bird studies and how this avian knowledge can contribute to their, and our understanding of ocean systems."

In short, Schreiber notes that answers to "what"questions abounded during the symposium, but "why" and "how" questions were not addressed. However, this is a universal problem in seabird biology and is not confined to South Africa. This is certainly true for the eastern North Pacific, where most PSG activity takes place.

Overall, I was favorably impressed with these *Proceedings* and would recommend this book to those wishing to learn more about marine birds and their conservation problems in this part of the world and to gain a wider perspective on their own studies. A number of the papers will surely be used and quoted widely, and they will foster a greater understanding of marine birds on a world scale. The African Seabird Group and, in particular, John Cooper, the editor of these *Proceedings*, are to be congratulated for producing a very fine report on the state of seabird biology in South Africa and surrounding seas.

Gerald A. Sanger, U. S. Fish and Wildlife Service, Denver Wildlife Research Center, Alaska Field Station, 1011 East Tudor Road, Anchorage, Alaska 99503.

The Arctic Skua, a study of the ecology and evolution of a seabird. 1983. P. O'Donald. 324 pp. Cambridge University Press. $49.50.

This book concerns the population dynamics and genetics of a colony of Parasitic Jaegers. O'Donald presents in one place a summary of studies spanning 30 years.

Chapter one presents the history of the Fair Isle colony, methods for capturing the birds, the sorts of data collected, describes the phenotypes (color phases) of adults and chicks, introduces ideas on the interaction of ecology and genetics, and suggests the phylogenetic relationships among skuas and jaegers. Chapter two reviews the history of the various Parasitic Jaeger colonies in Shetland and Orkney, discusses the regulation of numbers and migration in Parasitic Jaegers, and the historical and theoretical aspects of the clines in the plumage

polymorphism. Chapter three covers some aspects of kleptoparasitism by Parasitic Jaegers, the energetics of feeding behavior, and the value of territories. Breeding ecology is discussed in Chapter four. Chapter seven covers territoriality, breeding behavior, and the measurement of territory size, and begins the discussion of sexual selection, which will occupy most of the remainder of the book.

Most of the material of interest to the general reader is found in the first four chapters and chapter seven. These are also the chapters in which most of the photographs and fine drawings by Robert Gillmor occur. The book makes no pretense of being a general review of the biology of the species (e.g., the work of W. J. Maher [1974. Ecology of Pomarine, Parasitic, and Long-tailed jaegers in Northern Alaska. Pacif. Coast Avifauna. No. 37] isn't mentioned.). It does, however, adequately cover the material needed to understand the problems the author is concerned with. The author captures well the feeling of the environment on Fair Isle, what it's like to work in a jaeger colony, and his attachment to his subjects. From the start he introduces the theoretical importance of what he describes and shows his keen attention to detail. All biologists could gain from his discussion of the inadequacies of previous short-term studies and the amount of long-term work required to understand the population biology and genetics of these birds. I found Chapter three to be out of place in the book; it seems to be mainly an attack on several previous studies that suggest alternative selective advantages of the polymorphism and territorial system of Parasitic Jaegers. It was the only instance where the author sounded condescending toward other workers.

Chapter five introduces a genetic analysis of the matings among phenotypes, which is complicated by the fact that the phenotypes assigned to the chicks don't always match that assigned to the same individual as an adult. The heritability of breeding dates, clutch size, and fledging success are also covered. Chapter six deals with demography and selection. Chapters 8 through 11 deal in great detail with the development of the author's theories on sexual selection and how well they agree with field observations. O'Donald finds that the pale phenotypes are favored by natural selection, since they mature earlier and thus have a greater chance of surviving to breed. On the other hand, sexual selection based on female choice favors melanic males. On Fair Isle sexual and natural selection are not balanced, but rather favor the dark birds. Over five generations, however, the phenotypic ratio in Shetland appears to be stable. Since the predicted increase in the frequency of melanics is about the same as the standard deviation of their observed frequency, data for ten generations are required to show if a change is occurring. O'Donald concludes that the question about the stability of the polymorphism cannot be answered by the relatively short-term (30 years!) observations available. He ends by presenting some evidence that the diffusion of genes for the pale morph is important in maintaining the polymorphism in Shetland.

O'Donald's work is an exciting blend of field and theoretical studies and illustrates the depth of understanding that can be gained from asking specific questions and much hard work. No student of evolutionary theory should be without this book.

If your knowledge of statistics and population genetics is weak, you will find some hard going in the second half of the book. On the other hand, the author writes so well that even if you don't understand statistics and modeling you will get an idea of why it is important to obtain certain kinds of field data. The book unfortunately is quite expensive. However, it belongs on the shelves of specialists and every university library.-J. G. S., Jr.

Seabirds, an identification guide. 1983. P. Harrison. 448 pp. Houghton Mifflin. $29.95.

Peter Harrison spent 11 years working on this book, many of them working at odd jobs as he traveled around the world to get first-hand knowledge of his subjects. His text shows that he worked just as hard in libraries and museums. This book is probably as close as a field guide will ever come to being a scholarly book and undoubtedly will be used for identification in museums as well as in the field. It may be rash to call this the definitive seabird guide, but it is hard to imagine improvements other than updating as new information on distribution and identification becomes available.

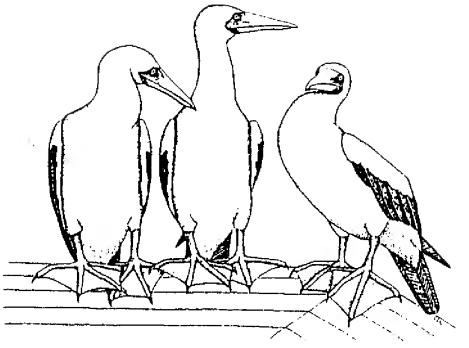
This book will not enable the observer to identify every seabird seen, but with judicious use and experience he/she should be able to identify most of them. Those tempted to put a name on every bird seen are directed to the author's often repeated caution that "identification in the field is problematical." Some species are hard to tell apart even on the plates in the book, and in many the details on the plates are impossible to see at sea. Harrison is careful to point out the pitfalls of identifying difficult groups, and all users of the book should read the text carefully before heading to the field. For example, though Plate 20 makes it seem that one should be able to identify the prions with a little work, the text is less encouraging. It is interesting that adopting Cox's (1980. Rec. S. Aust. Mus. 18:91-121) taxonomy has somewhat simplified the species identification in this group.

The plates are exceptional in showing the variations in plumage found in many marine birds. In this respect they are far ahead of any other field guide I have seen and set a standard that I hope other publishers will follow. The drawings are good to excellent but somewhat uneven in quality. I hope that in future editions gull plates 63, 65, and 71 are brought up to the quality of the others. The Pigeon Guillemots on Plate 85 look as though they had been drawn by Modigliani. None of their deficiencies, however, will interfere with field identification. The plates have grainy, neutral-colored backgrounds but in some cases, such as Plate 11, they are too murky.

I suspect that the author had many difficult decisions on how many figures to present for each species. An entire plate devoted to the Herring Gull seems about right, but perhaps most users of the book need more help on jaegers than they do on Herring Gulls. It is good to have almost all of the grebes illustrated in one place, but some of them will probably never be seen on salt water. In future editions I'd replace the drawing of the Atitlan Grebe with one of the Hooded Grebe, which is suspected to winter on marine waters. Field observers should be alerted to look for Hooded Grebes, since observations of winter flocks(?) may be the best way to estimate the population size of this species. Harrison has tried to group species that might be confused with each other and that may occur together. In most cases this works well, but it leads to some strange assemblages of the leftovers. The White Tern should be on the same plate as the rest of the noddies. I would rearrange the alcid plates, since the attempt to organize them geographically doesn't address the problems most field observers will have in identifying closely related species.

I haven't attempted to check the accuracy of the range maps, but for most seabirds they can be only rough estimates and should be used with caution in identifying species.

The author and publisher are to be congratulated for producing this fine book. It will be a valuable tool for increasing our knowledge of seabirds and should give its users considerable enjoyment-J. G. S., Jr.



NEW PUBLICATIONS

Tropical Seabird Biology

Avian Biology No. 8, Tropical seabird biology, Proceedings of an international symposium of the Pacific Seabird Group, Honolulu, Hawaii, 2 December 1982, is now available. The volume contains eight review articles:

Ainley, D. G., & R. J. Boekelheide. An ecological comparison of oceanic communities of the South Pacific Ocean

Diamond, A. W. Feeding overlap in some tropical and temperate seabird communities

Whittow, G. C. Physiological ecology of incubation of tropical seabirds

Langham, N. P. Growth strategies in marine terns

Ricklefs, R. E. Some considerations of the reproductive energetics of pelagic seabirds

Nelson, J. B. Contrasts in breeding strategies between some tropical and temperate marine pelecaniforms.

A review will appear in a future issue of the PSG Bulletin.

The volume costs $12.00 ($9.00 to PSG Members). Make checks payable to the Cooper Ornithological Society; prepayment in U.S. dollars only is required. Send orders to:

Cooper Ornithological Society - PSG
Allen Press
P. O. Box 368
Lawrence, KS 66044, U.S.A.

Hawaiian Seabird Feeding Ecology

Hawaiian seabird feeding ecology. 1983. C. S. Harrison, T. S. Hida, & M. P. Seki. Wildlife Monograph No. 8. The Wildlife Society.

This publication summarizes the diets of 18 Hawaiian seabirds and their variation within and between species. These differences are discussed in relationship to the morphology, feeding techniques, breeding biology, and ecology of the species studied. A review will appear in a future issue of the PSG Bulletin.

Copies may be obtained for $4.05 from:

Executive Director of the Wildlife Society
5410 Grosvenor Lane, Bethesda, MD 20814

Wildlife and Wildlife Habitat of American Samoa

The U.S. Fish & Wildlife Service has published a two-volume report on the wildlife and habitats of American Samoa. Volume I., Environment and ecology, includes an introduction and chapters on procedures, physical environment, biological environment, community relationships, and findings and recommendations regarding resource management. Volume II., Accounts of flora and fauna, reviews the species of plants and vertebrates found on American Samoa. Accounts of plants are brief and include descriptions and status. Accounts of animals include an evaluation of current status, a discussion of the species' history and biology, and a summary of known specimens from American Samoa. Each volume has an abundance of tables and appendixes summarizing various distributional and ecological data. These volumes will be valuable for anyone interested in the flora and fauna of the South Pacific.

Copies may be obtained from:

U. S. Fish & Wildlife Service
Lloyd 500 Building, Suite 1692
500 N.E. Multnomah St., Portland, OR 97232

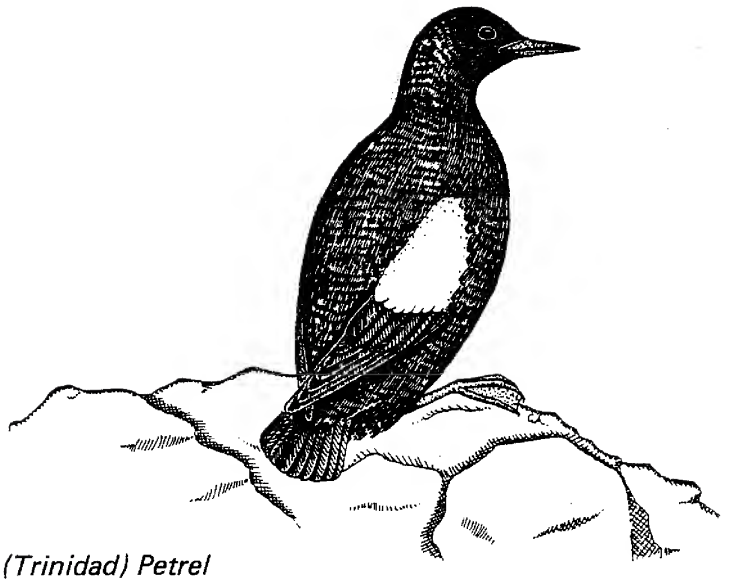
Marine Birds of the Southeastern United States and Gulf of Mexico

Part III (Charadriiformes) of this valuable work (see review in PSG Bulletin, 1982, 9:45-46) is now available. Parts I (Gaviiformes through Pelecaniformes) and II (Anseriformes) have been reprinted and also are available. These volumes and a list of other National Coastal Ecosystems Team (NCET) publications are available from:

Information Transfer Specialist
National Coastal Ecosystems Team
1010 Gause Blvd., Slidell, LA 70458

Seabirds of Eastern North Pacific and Arctic Waters

Pacific Search Press will publish Seabirds of Eastern North Pacific and Arctic Waters, edited by Delphine Haley, this spring. The text, which is the work of 13 scientists, will cover the procellariiform, pelecaniform, and charadriiform birds found in this area as well as general information on seabirds, conservation, and classification. One of the highlights of the book will be 90 color photographs of seabirds and their habitats. The publisher calls the book "a panoply of visual delights and scholarly research that will attract both lay person and expert to the world of these winged wonders." A review will appear in a future issue of the Bulletin.



BULLETIN BOARD

Request for Information on the Herald (Trinidad) Petrel

The Herald Petrel (*Pterodroma arminjoniana heraldica*) was formerly regarded as a rare visitor to northern Australia, possibly breeding on Raine Island (11°36'S., 114°01'E.) (see Warham, J., 1959. Emu 59). Outside of Raine Island it is known from fewer than half a dozen sightings since first discovered for Australia by Warham. For the last four years I have been studying aspects of seabird biology on Raine Island and have made a number of observations of Herald Petrels, including a confirmed record of breeding which will be published in due course. Recent sightings by C. Corben in the Coral Sea, east of Raine, strongly indicate that Herald Petrels also breed on rarely visited cays.

I am seeking information on this species from other areas and would greatly appreciate reports of recent observations, both published and unpublished.

At Raine Island, I am working on aspects of the biology of Red-tailed Tropicbirds (*Phaethon rubricauda*), Brown and Masked boobies (*Sula leucogaster*, *S. dactylatra*), Banded Landrails (*Rallus philippensis*), and Rufous Night Herons (*Nycticorax caledonicus*). Raine also has large seabird population of breeding Red-footed Boobies, two frigatebirds (*Fregata minor* and *F. ariel*), Wedge-tailed Shearwater (*Puffinus pacificus*), noddies (*Anous stolidus* and *A. minutus*) (non-breeding), Silver Gull (*Larus novaehollandiae*), and terns (*Sterna anaethetus*, *S. fuscata*, *S. bergii*, S. bengalensis, *S. sumatrana*, and *S. dougalli*). If any of your members want information on these species for Raine or the Northern Great Barrier Reef islands, I would be pleased to correspond.

B. R. King, Northern Regional Center,
Queensland National Parks and Wildlife Service,
Marlow Street, Pallarenda, Townsville, QLD 4X10,
Australia

IOC Scientific Program Content

The Scientific Program Committee for the 19th International Ornithological Congress, to be held in Ottawa in 1986, has been appointed by the President, Professor Klaus Immelmann. Suggestions for the scientific program may be sent to the committee chairman, Bruce Falls, Department of Zoology, University of Toronto, Toronto, ON M5S 1A1, Canada, or via

David Nettleship, Bedford Institute, P.O. Box 1006, Dartmouth, B2Y 4A2, Canada. Suggestions for symposia should include details of subject matter, possible leaders, and participants. Symposia of general interest and involving international participation are encouraged. The possibility of including contributed oral papers as well as posters is under consideration. Responsibility for the final program remains with the committee: Dr. J. C. Barlow, Dr. W. Bock, Dr. F. Cooke, Prof. Dr. A. Dhondt, Dr. B. J. Falls (Chairman), Prof. V. Ilychev, Dr. R. McNeil, Dr. D. N. Nettleship, Dr. I. Newton, and Prof. Dr. W. Wiltschko.

Colonial Waterbird Group 1984 Annual Meeting

The Colonial Waterbird Group will hold its 1984 annual meeting October 4-7 at the Sheraton Inn and Conference Center, Ithaca, New York. Donald A. McCrimmon, Cooperative Research Program, Laboratory of Ornithology, Cornell University, Ithaca, NY 14850, will be Local Chairman. Information on submitting applications and abstracts for the scientific program can be requested from William E. Southern, Dept. Biological Science, Northern Illinois University, Dekalb, IL 60115. Formal announcement and registration forms will be mailed to CWG members in the spring of 1984.

CWG officers recently elected for two-year terms beginning in 1984 are: President R. Michael Erwin, Vice President (President-elect) William E. Southern, Secretary Donald A. McCrimmon, Treasurer Iola Price. Councillors elected for three-year terms are: Thomas W. Custer, Julian L. Dusi, and Richard T. Paul.

A Journal of Southern Seabirds

The African Seabird Group produces a journal, *The Cormorant*, which has had as its primary region of interest "all seabirds (coastal and pelagic) occurring in the Afrotropical region, and on islands in the Atlantic, Indian and Southern Oceans between 20°W., 80°E., and south of 20°N."

The "region of interest" was recently expanded to include all southern hemisphere seabirds. Thus, *The Cormorant* will be happy to receive and referee for publication papers and notes dealing with seabirds in the southern Pacific, South America, Australasia, and the whole Southern Ocean as well as around the Afrotropical Region. Beginning with Vol. 12(1) of 1984, *The Cormorant* will be subtitled "A Journal of Southern Seabirds" in accordance with its expanded role. The region of interest of the African Seabird Group *per se* will continue to be primarily in southern Africa.

Contributions should be sent to the Editor, Dr. John Cooper, African Seabird Group, c/o FitzPatrick Institute, University of Cape Town, Rondebosch 7700, South Africa.

Colonial Waterbirds

The Colonial Waterbird Group supports the publication of the journal *Colonial Waterbirds*. Although the journal began its first three years (1977-1979) as a Proceedings, it now is a fully refereed, professionally printed journal. All contributions relating to research, management, or conservation of waterbirds (Sphenisciformes, Procellariiformes, Pelecaniformes, and Lari) and their habitats are welcomed. The journal will publish regular research papers, notes, and special symposia or workshop results. For further information, contact the Editor, Dr. Herbert Kale II, Florida Audubon Society, 1101 Audubon Way, Maitland, FL 32751.

Science Software Newsletter

The Center for Environmental Studies, Arizona State University, is interested in publishing a newsletter dedicated to computer (particularly microcomputer) software and applications for the natural sciences. The newsletter would be published quarterly and would contain 1) a listing and short review of recent scientific software, with availability and compatibility specifications; 2) one or more articles on microcomputer techniques — how to download software for different systems, how to choose between a minicomputer and a network of micros, etc.; 3) a forum for advertising "custom" software — a place where scientists who have written software for specialized mainframes can list and describe programs for free use, exchange, or sale. We are currently assessing the level of interest in such a publication among the scientific community as an aid to obtaining necessary funding. If you are interested in seeing such a publication, would like further information regarding it, or would be willing to serve as a reviewer for new software and documentation, please contact: Diana J. Gabaldon, Center for Environmental Studies, Arizona State University, Tempe, AZ 85287, (602) 965-3051.

Wingtips

Wingtips (formerly *Wings*), a quarterly for those curious about birds, will publish requests for assistance and information on grants and awards available to amateurs. It solicits short reports of field observations and black and white photographs of bird behavior. Contributions and inquiries should be sent to *Wingtips*, Box 226, Lansing, NY 14882.

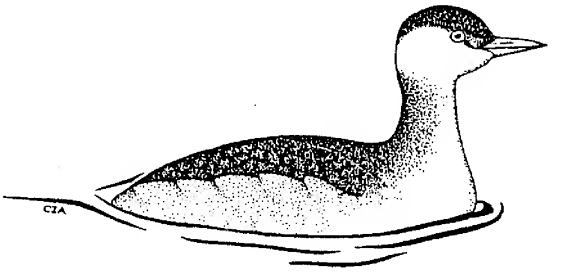
The Seabird Group 1985 Conference

The Seabird Group will hold a conference with the general theme of "Population Studies and Population Monitoring" at Denstone College, Uttoxeter, UK, on 15-18 February 1985. A workshop on population monitoring will be held during the final day.

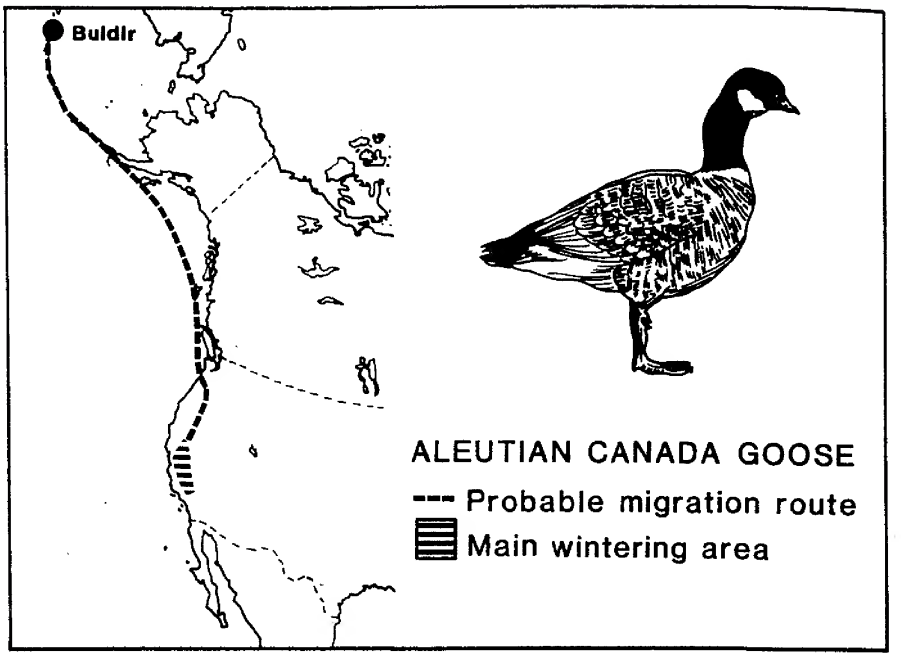
The cost for the conference fee and full board is expected to be about £30 - £40. Limited funds, mainly to defray expenses of foreign speakers, will be available.

Those interested in attending should send a preliminary title for a talk or poster paper and a statement on whether financial assistance would be required to Dr. J. P. Croxall, The Seabird Group, c/o Royal Society for the Protection of Birds, The Lodge, Sandy, Beds SG19 2DL, UK. Abstracts, which will be published, will be required in advance.

Current Officers of the Seabird Group are now John P. Croxall, Chairman; Euan Dunn, Secretary; and Adrian del-Nevo, Newsletter Editor. All correspondence should be sent to the above address.



Request for Information on Aleutian Canada Goose



Study of the migration and wintering distribution of the endangered Aleutian Canada Goose after the birds leave the Aleutian Islands, conducted since 1974, has shown that most of the geese migrate to California, arriving between mid-October and mid-November. They stop near Crescent City, along the northwest coast, and in the Sacramento Valley near Colusa before reaching their winter terminus in the San Joaquin Valley near Modesto and to a lesser extent near Los Banos. On their return flight most birds stop between mid-February and mid-April near Crescent City, which is the major spring migration staging area, before departing for points north.

Relatively little is known about the migration routes and timing before and after the geese are in California. Some birds are known to leave their principal nesting island on Buldir, near the western end of the Aleutian chain, in early September, but other individuals were still present when the last investigators left the island on 29 September. From general observations of unmarked birds we believe that in the fall, at least some geese migrate east to the vicinity of Unimak Island, at the eastern end of the Aleutian Islands; however, ground surveys indicate that apparently only Taverner's Canada Geese from the mainland of Alaska actually stop there. Because of the lack of definitive observations along the coast of mainland Alaska and of British Columbia, we believe that Aleutian Canada Geese fly across the Gulf of Alaska, as do Brant and Cackling Canada Geese. Probably most of them do not make landfall until they reach the Crescent City area, although in recent years up to several hundred birds have been stopping at times near Langlois, along the southern coast of Oregon. Scattered birds have also been recorded farther north along the Oregon coast and in the Puget Sound area of Washington.

While most birds follow the routes outlined above, a few have been recorded from the Willamette Valley of Oregon; various points in California, including the northeastern part of the state, Farallon Islands, Morro Bay area, San Diego area, and Salton Sea area; and along the Colorado River in southern Nevada, southwestern Arizona, and Sonora, Mexico. Almost every

year Aleutian Canada Geese are reported in various spots in the Sacramento-San Joaquin River Delta area, and just last year we learned about a flock of up to 100 birds frequenting an area near El Sobrante in northeast San Francisco Bay from mid-December to mid-February. In the spring, large numbers of birds pass through the Crescent City area, but populations there are smaller than the total of those counted at the various use areas in the fall and winter.

In response to management practices the population of Aleutian Canada Geese has increased from 790 in the spring of 1975 to about 3,200-3,500 birds in the fall of 1982. Accordingly, we can expect the birds to wander more as their numbers increase and in response to changes in weather and food conditions.

To better define the areas used by the birds, we need help in reporting Aleutian Canada Geese, particularly in the region north of California. The Aleutian is a small goose weighing 4-5 pounds. Within its geographic range its size is between that of the smaller Cackling Canada Goose, which has a dark breast and very stubby bill, and that of the larger Taverner's and Lesser Canada Geese, which have similar medium-brownish-gray breasts but somewhat longer bills. The most distinguishing feature is a white ring at the base of the black neck which is conspicuous in adults but less distinct in young birds. Some Cacklers, Taverner's, and Lessers may exhibit this neck ring but usually only scattered individuals and not an entire flock. For birds in the hand, the culmen length (distance between the tip of the bill and the first feathering on the forehead) ranges from 30.5 to 40 mm. Almost all Cacklers have smaller culmens, but considerable numbers of Taverner's and some Lessers may overlap at the upper end of this range.

If you observe, shoot, or otherwise encounter suspected Aleutian Canada Geese, please notify us immediately of the date, location, and the number, description, and actions of the birds. Some birds have plastic leg bands or neck collars whose color, numbers, and letters inscribed should be noted. These birds also have a metal leg band, whereas others may have only the metal band. Please telephone current observations to my office (707) 826-4759 during the day or to my home (707) 822-3867 in the evening. (I will accept collect calls.) Persons observing birds in Washington may report them to Jim Bottorff, U.S. Fish and Wildlife, Division of Endangered Species, 2625 Parkmont Lane, Olympia, WA 98502, phone (206) 753-9444 or -9445. Those in Oregon may report them to Jim Collins, Oregon Department of Fish and Wildlife, 3140 N.E. Stephens Street, Roseburg, OR 97470, phone (503) 440-3353.

If you know of others who may be in a position to observe Aleutian Canada Geese, we would appreciate your passing this request on to them. In addition, if you have knowledge of known or suspected Aleutian Canada Geese in the past, we would appreciate your writing the details in a letter.

Paul F. Springer
Aleutian Canada Goose Recovery Team